

SD Times

• SOFTWARE DEVELOPMENT

The Industry Newspaper for Software Development Managers

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QUOVADX TAKING OVER ROGUE WAVE FOR \$71M

Health-care platform company wants to expand its tools portfolio

BY ALAN ZEICHICK

Rogue Wave Software Inc., a well-known C++ tools company, is being purchased by Quovadx Inc., a larger software company that offers integration platforms focusing on the health-care industry. Quovadx will spend approximately US\$71 million in cash and stock; with Rogue Wave's cash, the actual cost is \$38 million. The deal between the publicly traded firms is expected to close in the first quarter of 2004.

Both firms had been making forays into the Web services market—Rogue Wave with LEIF, its Lightweight Enterprise Integration Framework for C++, and Quovadx with QDX Platform V, its component-based platform for developing and assembling composite applications.

Rogue Wave had seen challenges over the past several years, including management turnover and declining revenue. The company's fourth-quarter revenue, announced in October, showed an 18 percent decline over the same quarter in 2002, but the company managed to earn \$1.5 million for the fiscal year, as compared with a loss of \$7.3 million for the previous year.

According to Cory Isaacson, vice president of product development at Quovadx, his

company is committed to the Rogue Wave products and brands and will rename the QDX platform as a Rogue Wave product, reflecting that company's stronger reputation as a development tools provider. The Quovadx brand will be used for vertical-industry solutions.

A key value of Rogue Wave seemed to be its C++ expertise. "[Rogue Wave] is really the leading tools developer in the C++ space," said Isaacson, "and a lot of what we do with

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he said. Significantly, the new organization will have a leader who is not affiliated with IBM, he said.

"The whole essence is that IBM got this thing started and now we're passing on the responsibility. We're trying to make sure that it is independent," he said. "The best way to do that is to have a permanent

professional person to do that who is not affiliated with any one company."

The Eclipse consortium currently has been guided by two sets of contributors, McGaughey said: an open-source community that develops the code in the Eclipse base,



Eclipse will take a new name only if Sun joins, says McGaughey.

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Eclipse Will Break Out On Its Own

Open-source organization plans independence, may take new name

BY YVONNE L. LEE

Eclipse, the community built by IBM Corp. to build the namesake open-source Java integrated development environment, is about to go independent and may even undergo a name change, chairman Skip McGaughey told SD Times.

"Today, Eclipse does not have the ability to raise money; it does not have the ability to disperse funds; it doesn't have the ability to enter into legal contracts," explained McGaughey, an IBM employee who heads up the Eclipse effort.

The new organization will have its own articles of incorporation, leader, corporate counsel and full-time paid staff,

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Novell Looks to Become 'Relevant' Again

Plans to buy SUSE Linux with sights on the enterprise

BY DAVID RUBINSTEIN

Novell Inc.'s announcement last month of its intention to acquire German software firm SUSE Linux AG for US\$210 million is the latest step in the company's strategy to build its cross-platform services offering while engaging corporate de-

velopers for the first time, according to chief technology officer Alan Nugent.

The purchase of the Linux company gives Novell the operating system it needs to hold up the software stack it has pieced together with the acquisitions of Java tools and server company

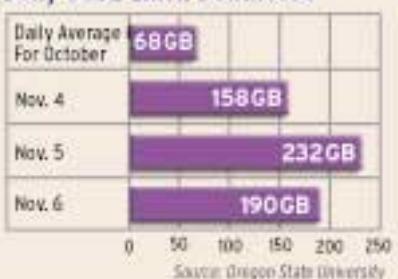
SilverStream Software Inc. and open-source desktop and server software company Ximian Inc., as well as incorporating its NetWare directory services technology. "We wouldn't represent corporate developers with SUSE alone," Nugent said, referring to their need for cross-platform operability.

"We believe we made a significant strategic error to not have an application development and delivery platform," Nugent admitted. "Web services gave us an opportunity to jump into that space." Nugent explained that when the integration is completed some time around the spring of next year, Novell customers will be able to use the Extend Java development tools with the Mono open-source .NET runtime for Linux on the back end to develop J2EE Web services that can run on Linux. "We're

NO AVERAGE DAY FOR SUSE

In the days immediately following news of Novell Inc.'s acquisition of SUSE Linux AG, downloads of the distribution spiked at the www.net.oregonstate.edu mirror site.

Daily SUSE Linux Downloads



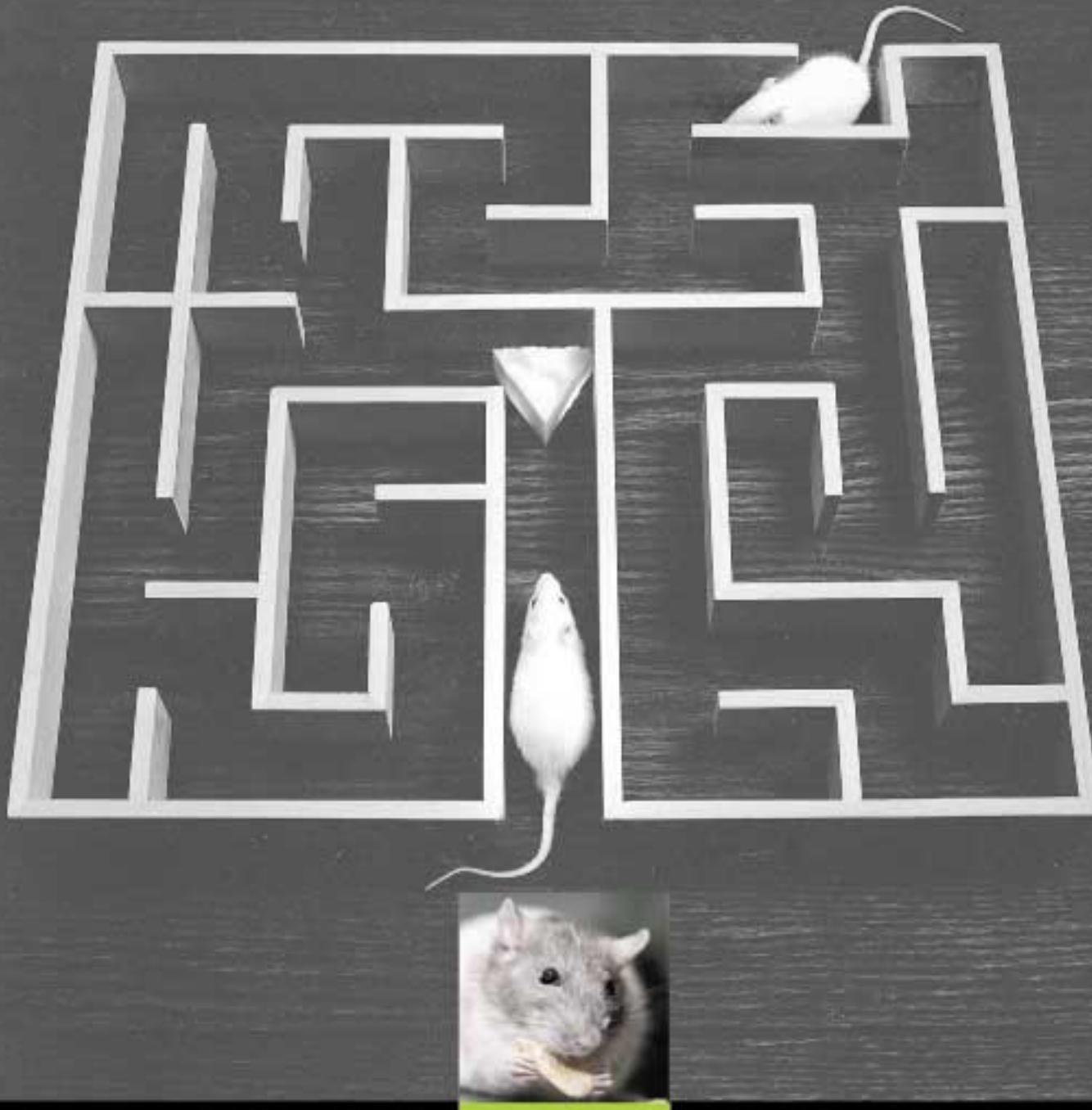
• Novell to Honor SUSE's UnitedLinux Commitments
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• Industry Enthused By Acquisition
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• Purchase Could Be Factor in SCO Suit
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UNFAIR



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Qt : THE UNFAIR ADVANTAGE IN THE RACE TO REDUCE SOFTWARE DEVELOPMENT CHAOS

With Business Integration, On-Demand Is in Demand

Companies insist on instant data gratification; EAI vendors take varied approaches

BY EDWARD J. CORREIA

On-demand is in demand. At least three integration software vendors have set their sights recently on the trend toward quick and seamless access to business data, regardless of the source. But the definition of on-demand varies by vendor.

Informatica Corp.'s latest solution for quickening data delivery is to throw more CPUs at the problem. "In essence, we're allowing you to take advantage of a farm of CPUs in a server grid," said Sanjay Poonen, Informatica's executive vice president of marketing of PowerCenter 7, its latest business integration solution that will become generally available early this month.

The software can divide its workload onto unused Linux, Unix or Windows computers on an enterprise network, Poonen claimed, as long as those computers are preloaded with the software. "Our server figures

out which CPUs are available and uses their processors to run part of the integration process," he said. "Increasingly, IT people have less budget and resources and have to still get things done, and are looking for software providers to make their infrastructure more intelligent and adaptive so that as they upgrade or maintain systems, they have to do less to stitch together integrations." Pricing is calculated based on average annual CPU usage.

For InterSystems Corp., a relative newcomer to the EAI market, on-demand means reduced development cycles with simplified APIs. "We're seeing shorter and shorter attention spans and increased demand for quick results," said Paul Grabscheid, InterSystems' vice president of strategic planning. "There's no patience for projects that run on for months and years."

InterSystems claims to solve

this problem with Ensemble, described by Grabscheid as a simplified approach to EAI development. "We abstract [disparate] systems such as SAP, SQL Server, mainframe COBOL applications into a consistent format despite running on mainframe, Linux, Unix, Windows with different databases, languages and protocols. Within Ensemble they look exactly the same to the developer, because Ensemble presents the desired development technologies as .NET components, Java classes, EJBs, XML documents or Web services—whatever is natural or preferred by the developer."

Grabscheid described a development scenario involving the government of the state of Florida, in which more than 50 different applications were



Informatica's approach spreads data delivery over CPUs, says Poonen.

dealing with overlapping groups of people with no way of relating them together. "We took five of their applications and built an umbrella over all of them. The process took about 90 days," most of which he said involved reviewing customer requirements; only eight days involved actual development work, he

claimed. "Their expectation was that it would take a year or two."

ON-DEMAND IN REAL TIME

Ascential Software Corp., the acknowledged leader in the EDI space, in August launched Real-time Integration (RTI) Services, an add-on to its Enterprise Integration Suite. The company claims the add-on lets developers create integrations that can be called on-the-fly. "If you've got a portal that needs to query a

customer across multiple databases, for example, it can do it as an instant call," claimed Michael Curry, product manager for Ascential's RTI Services.

Curry described RTI as a service-oriented architecture layer through which any Enterprise Integration Suite functionality can be published. "You can take our core transformation and matching capabilities and expose them as a Web service or any other kind of service that is loosely coupled from the applications that call it." Services can include data store queries, simple functions or more complex pieces of business logic that span disparate systems, he said. Ascential's software runs on mainframes, Linux, Unix and Windows servers.

Curry used an example of a retail firm looking to consolidate its point-of-sale data to provide sales clerks with better views of customer data as they make purchases. "They can know that a customer who walked in today is the same person who walked in two days ago and is [employed by] a larger corporate customer." Such information, he said, can be used to upsell based on past buying patterns. "And if that customer doesn't exist in the back-end systems, their data can be written to all the necessary systems. The ability to execute this on-the-fly is important because they don't want the customer left standing there waiting."

Among Ascential's development tools are prepackaged transformations, and matching and standardization routines, which Curry said greatly simplify development. "Our visual tools and out-of-the-box functionality eliminate hand-coding altogether. Typically we cut over 50 percent of the development." Also configurable on-the-fly, Curry said, is the software's CPU utilization, which by default is to max out all available processors.

Why is on-demand suddenly in demand? Curry said it's because advances in the technology have allowed enterprise data to be closer to where it's needed. "Most people are seeing that the more timely their information is, the more useful it is to the business." ■

BUILDING SECURITY, COMPLIANCE INTO APPLICATIONS

SPI Dynamics' WebInspect assessment tool integrated with IDEs

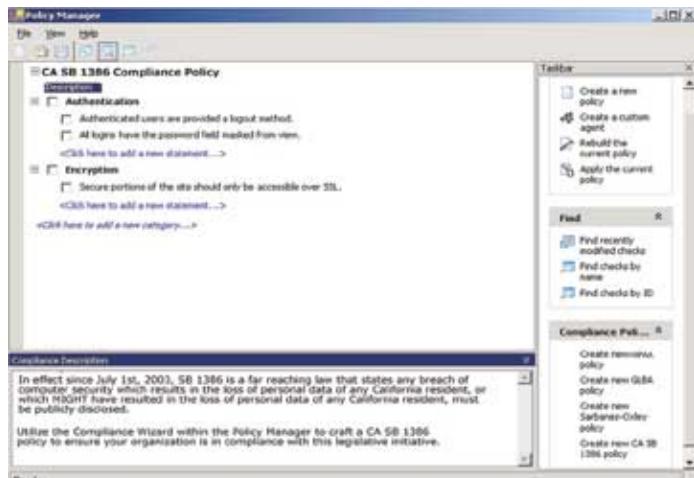
BY DAVID RUBINSTEIN

SPI Dynamics Inc. has been about identifying Web application security vulnerabilities. With the release next week of WebInspect Enterprise Edition 4.0, the company will put regulatory compliance on equal footing with security.

The new version of the security assessment tool will ship with a policy wizard that allows enforcement of regulatory policies such as HIPAA, Sarbanes-Oxley and Graham-Leach-Bliley to occur at the application level, not merely the network level, according to CEO Brian Cohen.

Cohen called the impact of all these new application regulations—most of which regard the privacy of information and how and what can be shared—"far reaching and slow moving. There will be no impact until there's a breach, or a lawsuit off of that breach."

Cohen said as long as a company can show it took the proper steps to prevent a breach, and acted in a way that would be considered reasonable, it



A new wizard enables policies to be custom created and enforced.

should not have a problem with regulatory compliance.

WebInspect 4.0 is oriented for a diverse audience, which includes auditors, compliance officers, software developers and QA professionals, Cohen said, addressing one of the problems his company has faced in selling the tool. "Application-level security...is not just for operations, but for QA, ops, developers. They all report to different people, and all [the different departments] have dif-

ferent purchasing processes."

Cohen acknowledged his company trails security-tools vendor Sanctum Inc., but noted some significant differences between the offerings. First, he noted that Sanctum evolved into the application security area from a background in firewalls. SPI, he said, is based on an initiative it is helping to shepherd through the Organization for the Advancement of Structured Information Standards (OASIS) consortium called Application

Vulnerability Description Language, or AVDL.

The language, Cohen explained, allows users to take the output from the vulnerability tests and improve the blocking rules associated with the firewall. Because WebInspect is based on what SPI Dynamics hopes will become an industry standard, it should be able to be used with any firewall product. Cohen said he expects the AVDL specification to be approved by the end of the year.

WebInspect can be used with IBM's WebSphere Studio Application Developer and Microsoft's Visual Studio .NET development environments, Cohen said, allowing developers to test code for security issues as well as functional defects that would be found with other, more traditional bug-tracking tools. For now, Sanctum's AppScan product works only with Visual Studio .NET.

Pricing for WebInspect Enterprise Edition 4.0 begins at US\$4,995 per seat; per-server and enterprise licenses also are available. ■

"We've changed the economics of integration; it's as simple and as complex as that." Complex because we challenged the very notion of integration. We felt true integration should connect everything, internally and externally, from business units to suppliers to partners to customers, everything. But to achieve this, someone had to develop a new architecture. So we did. The world's first Enterprise Services Bus, Sonic ESB™. It combines standards-based messaging, Web services, XML transformation and intelligent routing to coordinate the secure interaction of applications across your extended enterprise. It connects existing IT assets with tomorrow's ready-to-integrate applications, is nimble enough to change as your business does, and is rock solid. This allows you to integrate incrementally. To start where it's most needed and grow as required without costly obstacles. And that changes the economics of integration. Simple.



Greg O'Connor, President

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Borland Stays On ALM Message

BY ALAN ZEICHICK

SAN JOSE — Borland Software Corp. stayed true to its new message of promoting software as a C-level strategic resource to solve business problems, rather than as the exclusive domain of isolated programmers solving technical problems, at its annual user conference held here in early November.

The company not only discussed its newest IDEs and tools, such as a revamped JBuilder and Delphi, but also touted its application life-cycle management (ALM) suite approach, which adds elements from its acquisition of Starbase and TogetherSoft earlier this year, as well as requirements management, team collaboration and model-driven development to its product portfolio.

In an exclusive interview with SD Times, Borland CEO Dale Fuller and CTO Blake Stone explained that the company's mission is to go beyond merely improving individual programmer productivity to more directly trying to solve business problems that result in a genuine benefit to the customer's bottom line.

However, they emphasized that unlike the recent past, such as its near-fatal flirtation with the "Inprise" strategy in the late 1990s, Borland doesn't intend to walk away from developers to focus solely on wooing C-level executives. However, its product advances can't only focus on code warriors, said Stone.

"The problems that cause [development] projects to fail aren't the technology ones," said Stone, adding that the real issues affecting development teams are those of communication and collaboration.

LACK OF COMMUNICATION

Too often, he said, programmers don't know what they're supposed to build, or aren't aware of what other programmers are doing. Borland's goal, through incorporating requirements management into its tools, is to make it easier for line-of-business managers and other customers to communicate requirements all the way through the developer organization, and for programmers to be sure that they're writing code that addresses those requirements.

The same theory goes for the company's integration of the TogetherSoft model-driven tools, Stone added. "We want every programmer to be design-aware. They may not actually do the designing, but they have to know if [what they're coding] breaks the design."

SD Times
SHOW REPORT

Stone was dismissive of competitors' efforts to completely automate the development process through code generators, but said that his tools are trying to reduce the amount of code that has to be written, tested and maintained. "A line of code is not an asset—it's a liability," he expounded, adding that Borland is focusing on giving companies the most business benefit for the least amount of code.

Fuller expanded on that comment, saying that in some ways, Borland is in the risk-mitigation business—that there's some risk in every development project, due to the costs of building and maintaining the application, as well as the potential for poor results. So, he said, part of Borland's message to cus-

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BORLAND REV'S JAVA SUITE, DELPHI, JANEVA

BY ALAN ZEICHICK

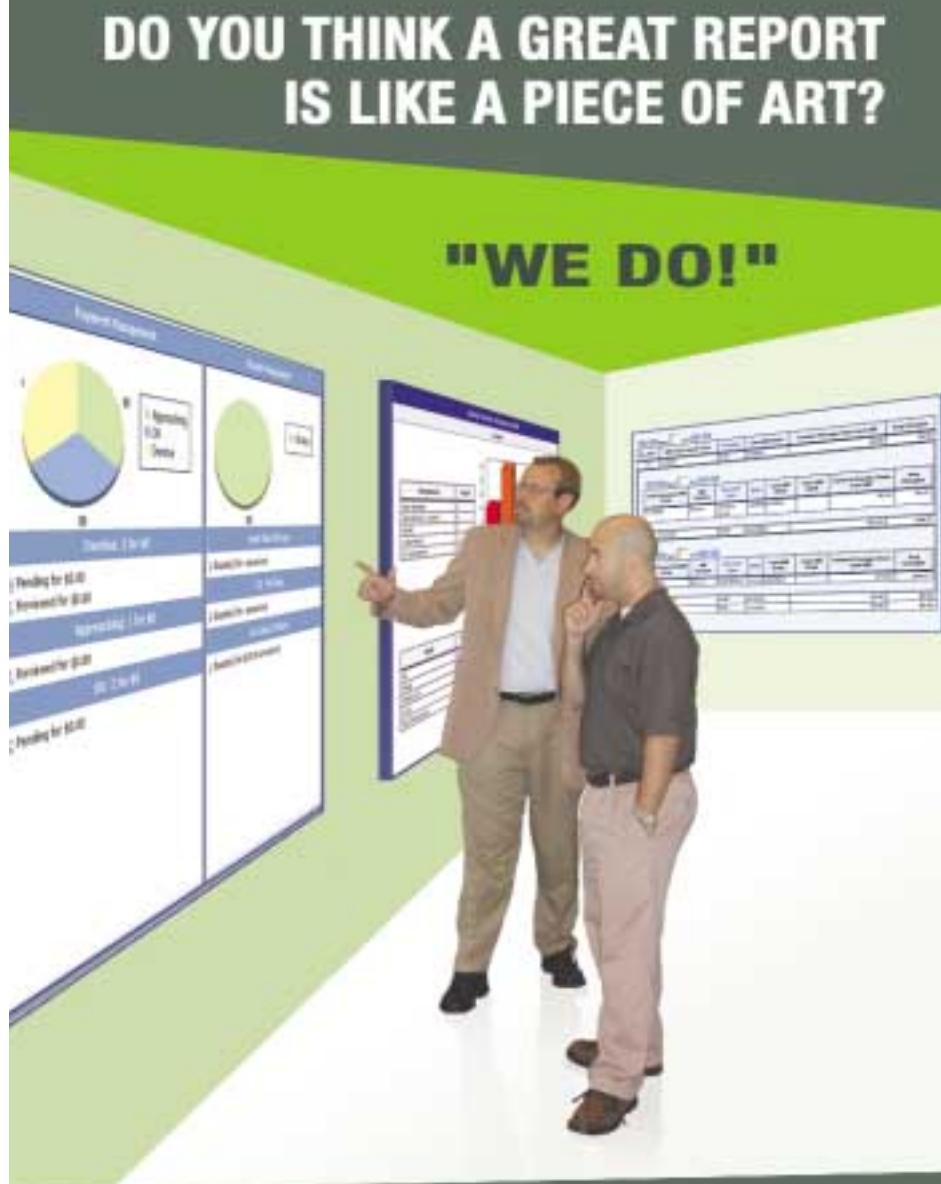
At its user conference, Borland Software Corp. unveiled the expected Enterprise Studio 7 for Java, which consists of its recently announced JBuilder X IDE, as well as its Caliber-RM requirements management tool, StarTeam collaboration software and Together modeling tools. It also includes its Enterprise Server J2EE application server, JDataStore Java database and Optimizite Studio code analyzer and performance monitor. Borland also unveiled updates to Delphi and Janeva.

Borland CTO Blake Stone also hinted at a potential merging of the company's different language products into a single multilanguage IDE and tool suite. He said that the company was demonstrating a nonreleased tool for embedded developers that combined Java and C++.

In regard to a more general multilanguage tool set, he said, "Clearly, we're building the underpinnings."

New for this version of the suite, according to Bill Pataky, director of product management, is a visual designer for the open-source Struts application framework, a visual drag-and-drop Web services builder, and a deployment description editor. The suite also now can deploy to the JBoss app server, in addition to app servers from BEA, Borland, IBM and Sun,

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Sun's 'Project Rave' Aims for Visual Developers

Preview release of graphical development environment set for this week

BY YVONNE L. LEE

Java development for server applications can be complicated—and that complexity might

persuade developers to use Visual Studio .NET to build .NET applications instead. Sun Microsystems Inc. is trying to

simplify J2EE application development with "Project Rave," a new visual development tool scheduled for public preview

this week. Rave was first announced at JavaOne last June.

Sun is trying to court developers who want to write less

J2EE code or who don't have the skills to develop code-intensive server applications in J2EE, according to vice president of Java Web services and tools marketing Joe Keller, who declined to provide the product's actual name. That name will be announced at Rave's general release in July 2004 at the JavaOne conference, he said.

"The rap on Java is that it's hard," Keller said. "That's not true. It's that the tools haven't been invented that make it easy to use."

BETTING IT'S BETTER

Rave will use a drag-and-drop tool palette and properties to connect applications to backend Java components. Sun is betting that the product's Java output will make it more attractive than the Microsoft competitor.

"We don't have a cliff that people have to drive off like our competitor does," said Keller. He claimed that because Rave applications are written in Java, they could be scaled to be used in larger applications. "The output of Rave can be given to an enterprise developer, and because it's in enterprise Java, he can use it in his application," Keller said.

"Just placing a visual interface on Java Studio is not enough to address this group," Keller said. "You need to remove the complexity for a corporate developer. Project Rave does less, and it does that by removing the choices."

One constraint of the Rave tool, at least in its first version, will be that although it will be able to access Web services, developers will not be able to create Web services with it, Keller said.

However, Keller also acknowledged that Sun is venturing into unfamiliar territory, so it is setting a more extensive product preview period than for most other software.

The technology preview—a sort of public alpha release—will occur after the company's Sun Network conference in Berlin on Dec. 3 and 4, said Jeff Anders, group marketing manager, who added that a more traditional beta program will begin in the first quarter of 2004. ■

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Macromedia Flexes Enterprise Muscle

Creates presentation server, app framework to entice developers

BY DAVID RUBINSTEIN

Macromedia Inc. is bringing its rich-client development tools experience to Java, with a new presentation server and application framework called Flex. A beta version was released last month.

Previously, the company's multimedia product line has consisted of tools for building rich-client applications, based on Flash and Director, and Web-design tools such as Dreamweaver and ColdFusion. Those products largely existed in a separate world from serious enterprise Java development, but those worlds are joining closer with Flex, which uses a Java servlet to feed data to a Flash client.

Rod Hodgman, vice president of product management at Macromedia, likened working in Flex to the JavaServer Pages development model. "A developer draws on class libraries with components and containers. The app is then put out into the presentation server, compiled and sent to the Flash player in native Flash format [SWF]," he explained. "It offloads processing and such things as sorting, filtering and validation to the client. It acts more like a desktop application."

Because Flex is XML-based and the programming is declarative, any XML editor or Java IDE would be effective for creating rich applications, he added.

Hodgman said Macromedia is targeting developers "who wouldn't build rich Internet applications if they couldn't use their own tools and deploy to their own app servers."

To create rich user interfaces, enterprise developers will drag and drop UI controls onto a Flex palette, with the underlying FXML code being automatically generated.

"This will be great for applications with multistep processes that are hard to show in HTML," Hodgman said. "The whole page has to refresh, and process validation is off the client."

Hodgman said IBM has been a design partner for more than a year, adding that a version of Flex for WebSphere is in the works.

"This is the next logical step for the Web," claimed Dave Boloker, IBM's chief technology officer for emerging Internet

technologies, who said the Internet is moving toward "generation 2" applications that deliver audio and video clips to all manner of devices.

Boloker said one of the keys to Flex, which is expected to ship in the first half of next year, is its support for the Web services standards. "Now you can

use markup to create the UI, bindings, calls to Web services—all driven from the back end." Application developers, he said, "won't have to figure out [page]

flows, only business logic. Now they can just do Web services calls and do the binding. There will be a hybrid Web model."

A second release of Flex will be designed for Microsoft's .NET platform, he said. Macromedia's Project Brady, expected next year, will bring the programming model into Dreamweaver. ■

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Patent Office Agrees to Rare Review

BY YVONNE L. LEE

Citing "a substantial outcry from a widespread segment of the affected industry," the U.S. Patent and Trademark Office in mid-November made the rare move of re-examining a patent involving how to embed and control applications from within a Web browser.

The outcry came about after a Chicago court in August ordered Microsoft to pay a US\$520.8 million settlement for infringing on the patent, No. 5,838,906, in Internet Explorer.

The World Wide Web Consortium has contended that because of previously existing capabilities, the patent is not valid and that if this patent is upheld, its implications go beyond Microsoft or browser makers.

"The existence of the patent and associated licensing demands compels many developers of Web browsers, Web pages, and many other important components of the Web to deviate from the fundamental technical standards that enable the Web to function as a coherent

system. In many cases, those who will be forced to incur the cost of modifying Web pages or software applications do not even themselves infringe the patent (assuming it is even valid)," W3C director Tim Berners-Lee wrote in an Oct. 28 letter to Undersecretary of Commerce for Intellectual Property James E. Rogan.

In addition, the W3C submitted three pieces of what is called prior art, or evidence that a capability existed before a patent was granted.

"This was a failure on [the part of] the patent office to do its homework," said Ted Schadler, principal analyst at Forrester Research Inc. in Cambridge, Mass. "That said, they take 185,000 patents a year; they're kind of busy. The issue of what is patentable is going to become an ever-larger chunk of our due diligence. So much of our economy is based on [intellectual property]."

For its part, Microsoft, which filed an appeal to the court ruling, is trying to develop a workaround to enable Inter-

net Explorer to execute the commands without infringing on the patent.

"We don't want to be continuing to be infringing if something is not found to be in our favor," said spokesman Lou Gellows, who added that the patent remains in force during the examination period. Microsoft could face additional charges if it were to lose its appeal and it hadn't made any modifications, Gellows said.

A director's call for the re-examination of a patent is extremely rare, said Brigid Quinn, deputy director of public affairs for the USPTO. She estimated that since 1981 when the re-examination process went into effect, only 6,800 requests for re-examination have been made, while nearly 2 million patents have been granted in that time. Of the 6,800 requests for re-examination, only 2 percent come from a director's order in response to an industry concern such as this, she said.

Officials at the W3C did not return repeated calls for comment. ■

News Briefs

COMPANIES

Microsoft Corp. has renamed its media-playing software for mobile devices. Formerly called Mobile2Go, the new name is Windows Mobile Software for Portable Media Centers. The company also announced that its next-generation Xbox game devices would use IBM processors; the original Xbox used Intel's Pentium III . . . Training company

DevelopMentor Inc. has released new courses for Windows developers, including programs for SQL Server "Yukon" and .NET Mobile Applications.

PRODUCTS

Logic Library LLC has released a version of its **Logidex** asset management tool for .NET, as well as a free Logidex client plug-in for Microsoft's Visual Studio .NET . . . Actional Corp. has released a version of its Web services management suite for .NET. **Actional for**

Microsoft contains Windows versions of SOAPstation, Looking Glass Server, Active Agents and Actional Controls for VS.NET . . . Database vendor 4D Inc. has updated its turnkey **4D Business Kit** to add new security and "intelligent behavior" features to aid shoppers. Version 2.1 also has new reporting capabilities. The software costs US\$499 for an initial two-store license. The company also announced that an update to its cross-platform **4th Dimension** database will be compatible with Mac OS X 10.3. The update, 4D 2003.2, will be available later this year . . . IBM Corp. has made available its **Rational Rapid Developer v2003 release 2**, its updated rapid application development tool, to enable users to design, create and deploy portlets to the company's WebSphere Portal. The new version sells for US\$6,595 per floating license . . . BEA Systems Inc.'s new **Performance Monitor**

Console Extension adds data monitoring to WebLogic Server 8.1's administrative console. PMCE can be downloaded at no charge from BEA's Web site . . . **ULC Visual Editor 1.0** is a

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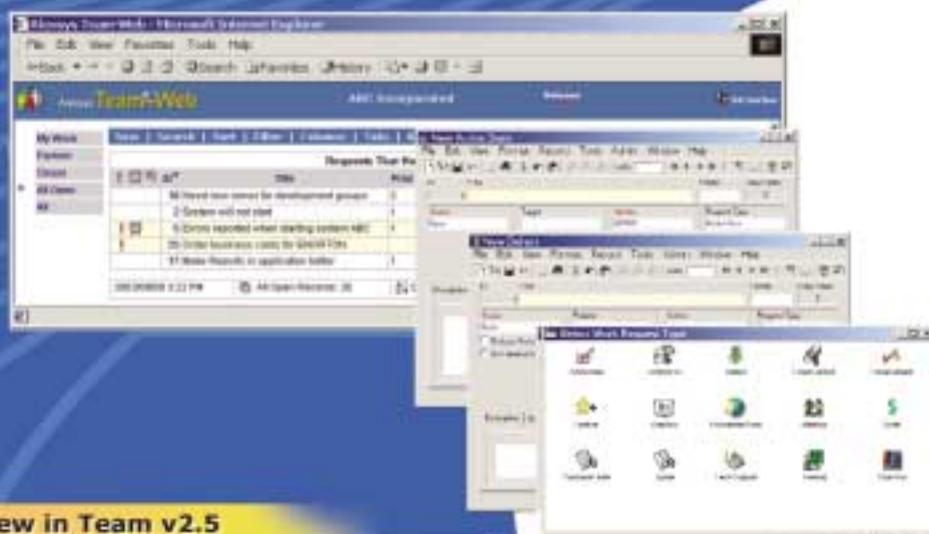
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News Briefs

MORE PRODUCTS

◀ continued from page 9

new GUI designer from Canoo Engineering AG for IBM's WebSphere Studio Application Developer, and is designed to make it easier to build rich-client applications. The software costs US\$499 . . . EJ Technologies GmbH has updated its **Install4J** Java-based installer tool. Version 2.0 now supports service launchers and service installation, and has APIs for custom screens and screen actions. The installer builder works with Linux, Mac OS X, Unix and Windows . . . Semantic Designs Inc. has released betas of its **C# Test Coverage** and **C# Profiling** tools. The company offers similar tools for C, C++, COBOL and Java . . . The initial alpha version of **Axis C++ 1.0**, a SOAP engine from the Apache Software Foundation, is now available. The release has partial support for both SOAP 1.1 and SOAP 1.2, and tools for building C/C++ components from WSDL files . . . CRM software maker Salesforce.com Inc. has enhanced **Sforce**, its Web services-based hosted application-server platform. Version 2.0 has new content controls, an updated SOAP/WSDL-based API and a new object query language. The company also is offering an Sforce plug-in for Borland's new JBuilder X and Enterprise Studio for Java 7 . . . ActiveState, now a division of Sophos Plc, has released **Visual XSLT 2.0**, an updated XSL Transformations debugger and editor designed to work with XPath expressions. The tool, which works with Visual Studio .NET, costs US\$295, or \$495 as part of a bundle with Visual Perl and Visual Python . . . Perforce Software Inc. has released a version of its **Perforce SCM** software configuration management system for Apple's Xcode IDE . . . Embedded tools developer Metrowerks Corp. has updated its **CodeWarrior Development Studio for ARM devices**. Version 2.0, which costs US\$5,995, adds an instruction set simulator called Virtual Platform, and adds new processor and kernel targets. The company also released **Code-Warrior Development Studio for StarCore DSP Architectures**, version 2.5, which is focused on StarCode's SC1200 and SC1400 cores . . . **UltraSQL 1.0**, a new native Windows port of the open-source PostgreSQL database, is in beta from NuSphere Corp. The database includes interfaces for ODBC, C/C++ and PHP scripts . . . Test-tools vendor Parasoft Corp. has added a team server to its **.TEST** unit tester for .NET-based Web services and applications. The new team server manages coding standard rules across a team or project. .TEST costs US\$900 per seat . . . Version 3.0 of **TMX**, a test-script authoring tool from ScriptTech Inc., can now generate WinRunner and SilkTest scripts, and has an interface to Software Prototyping Technologies' DTT tool. The Windows-based software costs US\$3,495 per seat . . . VMware Inc. has launched **VirtualCenter**, which it calls virtual infrastructure software designed for implementing and managing utility computing. The management server costs US\$5,000 plus \$300 per managed processor. The company also is offering a new **VMware SDK** designed to let applications integrate with VirtualCenter . . . New modules for **Introscope**, a Java application testing and performance monitoring suite from Wily Technology Inc., extend the software to work with Java applications deployed on IBM's z/OS and CICS Transaction Server . . . Version 1.5 of Magic Software Enterprises Ltd.'s **iBOLT** integration suite now works with BPEL4WS, an XML-based business process language being developed by OASIS.



SC1200 and SC1400 cores . . . **UltraSQL 1.0**, a new native Windows port of the open-source PostgreSQL database, is in beta from NuSphere Corp. The database includes interfaces for ODBC, C/C++ and PHP scripts . . . Test-tools vendor Parasoft Corp. has added a team server to its **.TEST** unit tester for .NET-based Web services and applications. The new team server manages coding standard rules across a team or project. .TEST costs US\$900 per seat . . . Version 3.0 of **TMX**, a test-script authoring tool from ScriptTech Inc., can now generate WinRunner and SilkTest scripts, and has an interface to Software Prototyping Technologies' DTT tool. The Windows-based software costs US\$3,495 per seat . . . VMware Inc. has launched **VirtualCenter**, which it calls virtual infrastructure software designed for implementing and managing utility computing. The management server costs US\$5,000 plus \$300 per managed processor. The company also is offering a new **VMware SDK** designed to let applications integrate with VirtualCenter . . . New modules for **Introscope**, a Java application testing and performance monitoring suite from Wily Technology Inc., extend the software to work with Java applications deployed on IBM's z/OS and CICS Transaction Server . . . Version 1.5 of Magic Software Enterprises Ltd.'s **iBOLT** integration suite now works with BPEL4WS, an XML-based business process language being developed by OASIS.

PEOPLE

Borland Software Corp. has hired **Scott Arnold**, a former McKinsey & Co. consultant, to serve as its new EVP and COO . . . **James Gosling** has become CTO of Sun Microsystems Inc.'s Developer Platforms Group. Previously, Gosling served as VP of Sun Labs . . . London-based digital software distribution company Softwrap Ltd. has hired **Dylan Solomon** to be its new COO. A chartered accountant, Solomon had been with Moore Stephens International, a British accountancy . . . Integration firm Vitria Technology Inc. has hired **Greg Anderson** as SVP of professional services and consulting. Previously, he was a partner in Deloitte Touche Tohmatsu's Healthcare Practice . . . **David Rubinstein**, executive editor of SD Times, has been promoted to editor of the newspaper. ■



GOSLING has become CTO of Sun Microsystems Inc.'s Developer Platforms Group. Previously, Gosling served as VP of Sun Labs . . . London-based digital software distribution company Softwrap Ltd. has hired **Dylan Solomon** to be its new COO. A chartered accountant, Solomon had been with Moore Stephens International, a British accountancy . . . Integration firm Vitria Technology Inc. has hired **Greg Anderson** as SVP of professional services and consulting. Previously, he was a partner in Deloitte Touche Tohmatsu's Healthcare Practice . . . **David Rubinstein**, executive editor of SD Times, has been promoted to editor of the newspaper. ■

Zend Serves PHP to Sun

Door open to other scripting languages in Web server

BY ALAN ZEICHICK

For those programming shops that like to develop Web applications using the PHP language, Zend Technologies Ltd. is now offering its PHP interpreter as an add-in for Sun's Java System Web Server 6.1.

Previously, Zend offered its PHP interpreter only for the open-source Apache Web server. The Israeli company also will be marketing, in conjunction with Sun, a PHP application accelerator specifically for the Sun Web server.

PHP is one of several open-source scripting languages, along with Perl, Python and TCL, that are often used by Web developers. The Java System Web Server had been known as the Sun ONE Web Server until Sun's brand changes last September.

There are two parts of the offering, explained Brad Young, Zend's director of product marketing. The first will be the free plug-in for the Sun Web server, called the PHP Enabler. The second part, called the Zend Perfor-

ROGUE WAVE

◀ continued from page 1

the Quovadx platform is integrating composite applications going to different data sources, such as mainframes, for instance, and Web services. The idea of treating C++ as another legacy data source that we could incorporate into our platform made a huge amount of sense."

Isaacson also said, "There's very little overlap in our customer bases. We're very strong in health care and some other segments; Rogue Wave is strong in financial services, and in other places that we're not. Plus, their customer base is very valuable."

He added that, at least initially, Quovadx plans to continue the entire Rogue Wave product line. "LEIF is certainly the thing that will be easiest for us to integrate with, because our [QDX] platform natively supports Web services. But as far as I know, we're going to continue all their products." ■

JSR-223: SCRIPTING PAGES IN JAVA WEB APPLICATIONS

This Java Specification Request, submitted by Sun, Macromedia, Oracle and Zend in June 2003, "will describe mechanisms allowing scripting language programs to access information developed in the Java Platform and allowing scripting language pages to be used in Java Server-side Applications." That means that Java ServerPages applications should be able to be scripted in PHP or other open-source languages, in addition to Java.

mance Suite, adds a code accelerator, content cache and data compression system, and costs US\$775 per server.

"As the central company backing PHP, we are always looking for ways to reinforce the ability for PHP to be adopted by corporate enterprises, and that is what led to this teaming with Sun," said Young. "We are deploying technology that allows PHP to run natively within the Java System Web Server. That creates an environment that's the best for deploying PHP applications—you get the best performance and the best reliability and security," he claimed.

Young added that enterprise customers had been frustrated in deploying PHP for externally facing applications, and implied the reason was that they didn't find the Apache Web server to be sufficiently secure for their needs.

"Customers, in many cases, are seeing a growing need for the ability to deploy PHP-based Web applications. However, they are unable to do so because that would involve having to deploy nonsecured Web servers in their DMZ, or demilitarized zone, and they had been unwilling to do so," Young explained. That's the reason why Zend wanted to work with Sun, he said.

The deal, according to Young, is exclusive to Sun, and Zend will not be working with other Web server makers to incorporate PHP into their platforms. "This is a Sun-only arrangement. When you look at the Web server products that are namely worth noting, you have Sun, Apache and IIS," he said.

"Apache is the native land from which PHP grew, so PHP is already there, plus it's less

adoptable by Fortune 1000 companies," he continued. "With Microsoft, the Fortune 1000s are also very wary to deploy IIS because of the security problems they've been having over the past few years," he said, "so it's pretty much an exclusive story."

SUN REACHES OUT

Moving to embrace PHP is part of Sun's strategy of reaching out to third-party platforms, said Chris Hogan, senior director of Java strategy at Sun.

"We've always been reaching out to CGI and Perl programmers, to get them to play with our Web infrastructure products. The acquisition of Chilisoft brought ASP in," he explained.

The difference with PHP, Hogan said, is in Zend's commercial support for the language and interpreter. "We've always had the ability to do open-source PHP configurable in the Web server, but that [capability] has not been able to go mainstream into our clientele because it wasn't quite up to snuff," he said. "With the Zend Performance Suite, it's now measuring up," and thus can be commercially viable from Sun's perspective, he added.

Hogan said that Sun is open to adding other scripting languages to the Web server, but isn't pursuing it aggressively. "Our main interest is to be working with Zend and PHP," he said, but added that JSR-223, Scripting Pages in Java Web Applications, applies to other languages. That JSR was first submitted in June 2003. "That holds the door open generically for all scripting languages to move into the mainstream," he insisted. ■

TODAY'S MENU: *food for thought*

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10

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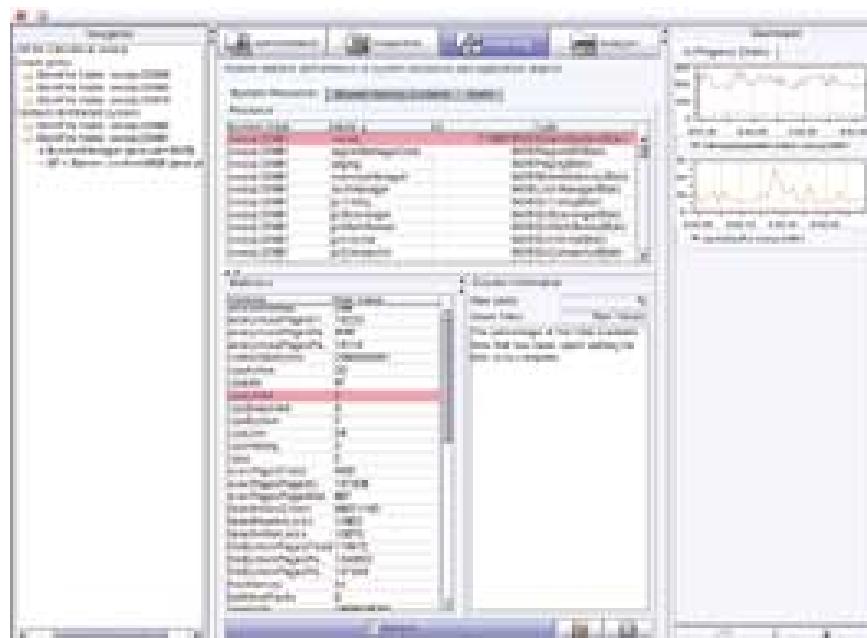
GemFire Adds Hierarchical Cache, 'C' API

BY DAVID RUBINSTEIN

Dynamic hierarchical caching and support for C/C++ applications and Java processes are among the new features in GemFire Suite 2.2, the data distribution, caching and management tool released in late October by GemStone Systems Inc.

GemStone, which was purchased for its J2EE technology by the German company Brokat in August 2000, split from Brokat in August 2001 and shifted its focus to data distribution. "Basically, [Brokat] was moving into mobile services, which is very popular in Europe," said Raj Kulkami, GemStone's chief technology officer. "We're focusing on gaps in messaging structures."

Kulkami noted that there is tremendous latency created when a number of applications move through middleware to access multiple data sources. "The bottleneck is moving data in vast environments," he said. GemFire, he explained, is a virtualized data layer that coexists with the middleware and either



GemFire's monitor gives users a view into runtime statistics and shared memory usage.

interrupts data service calls and supplies data from the cache, or makes the correct calls to the correct data sources and distributes the data where it needs to go.

The hierarchical caching allows applications to move data efficiently from multiple data stores to so-called edge caches, which serve large numbers of seats needing to access that data. "The edge caches talk fault-tolerantly with caches on the server," which he claimed help to reduce traffic to the database

servers, and improve scalability and performance.

A new C/C++ API enables applications written in those languages to gain native cache access, Kulkami added.

The GemFire suite consists of a symmetrical multiprocessing module, a data integration and distribution element and an XML integration module for pulling together data from multiple sources into an XML cache. Pricing is per CPU; Kulkami would not disclose the price. ■

ALM MESSAGE

◀ continued from page 5

customer executives is that better development processes and tools can reduce that risk, and therefore make custom software development a more attractive business proposition.

As an example of the risk, Fuller cited the trend toward using off-shore outsourcing to develop software. While the cost of individual programmers may be lower, he argued that there's a risk that the code won't match a company's requirements, or that the code quality may be poor. Thus, the customer has to spend too much time checking the off-shore code, and this reduces the benefit of the outsourcing project.

By using tools like Borland's suites, he claimed that U.S.-based companies can keep closer tabs on off-shore developers "all the way down to the programmer's desktop," and thus get better quality, and have more assurances that the application will meet requirements.

Fuller and Stone were vague as to Borland's future direction, beyond "continuing to build out the ALM solution," with an emphasis on expanding into specific business processes through partnerships with external vendors to build industry-specific application frameworks. ■

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BORLAND UPDATES

◀ continued from page 5

though Pataky said that the most common app server used for deployment is BEA's WebLogic.

Enterprise Studio 7 and JBuilder X are promised to ship some time this month, with versions available for Linux, Solaris and Windows. Pricing for the suite was not yet available from the company.

Borland also showed off its newest version of its Delphi IDE, which seemed more interesting to developers at the conference; this was not surprising, as according to one Borland executive, most of the approximately 2,000 attendees at the show were Delphi developers.

Called "Delphi 8 for the Microsoft .NET Framework," the new release is designed to, for the first time, generate managed code for Microsoft's Common Language Runtime, and is intended to migrate Borland's customers away from Win32 binaries. The software is also set to ship in December; pricing was not provided.

Finally, one week after the Borland Conference, the company announced Janeva 6.0, an update to its .NET middleware that allows Windows applications to access CORBA and J2EE server-side components via IIOP, the Internet Inter-ORB Protocol.

Janeva 6.0 is the third version of the product, and is scheduled to ship in January.

Vince Taisipic, product manager for Janeva, said that while the initial releases of the tool formally supported only the Borland Enterprise Server application server, version 6.0 works with BEA's WebLogic 7.0 and 8.1, IBM's WebSphere 5.0 and Oracle 9iAS. "Although we could have stated [at the initial release] support for these platforms, we wanted to run through a certification and qualification process in-house," a process that he said Borland has now completed.

In addition, he said, there is "new security support end-to-end from .NET to J2EE or CORBA back ends, like support for single sign-on, authentication and authorization," and also SSL. "That's right out of the box," he said, noting that previously, .NET developers had to write their own SSL code.

According to Taisipic, Janeva 6.0 adds new transactional features, such as two-phase commit and rollback, as well as callback capabilities that let J2EE or CORBA servers initiate communications with the .NET application.

"We needed to support a conversational integration," Taisipic explained, "so that a .NET application can call a J2EE and CORBA component, and then have that component call back to .NET." ■

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Novell to Honor SUSE's UnitedLinux Commitments

BY EDWARD J. CORREIA

SUSE Linux AG's distribution of the open-source operating system is the basis for UnitedLinux, the version first released by four cooperating Linux developers in late 2002 hoping to better compete in the Linux market. Yet Novell Inc.'s announcement last month that it would acquire SUSE will not affect SUSE's contribution to the UnitedLinux consortium—at least for now—according to a Novell spokesman.

Kevan Barney said Novell will continue to develop and support UnitedLinux. "The idea behind UnitedLinux was to create an enterprise-ready operating system. Novell supports that and looks forward to taking it to another level." He would not comment further, except to say: "There are no immediate plans to change the distributions or remove any underlying technologies. [But] we don't know what will happen with the baseline distribution beyond 2004."

SUSE's involvement in UnitedLinux, according to Barney, made it a more attractive acquisition target because of the relationships with Conectiva SA and TurboLinux Inc. that resulted. "They are present in very important markets, [Conectiva in] Latin/South America and [TurboLinux in] Asia, and we want to increase the potential of working with them."

Paula Hunter, general manager of UnitedLinux, believes that Novell's strong channel presence holds much promise for the unified distribution. "Novell is a big,

well-known brand that will add credibility and momentum to the acceptance of Linux in the enterprise." And although she hasn't spoken directly with Novell since the acquisition was announced, Hunter is sure there will be no short-term impact for UnitedLinux customers.

"SUSE was the maintainer of UnitedLinux and will continue to do that," she said. "We have contracts in place with SUSE that make sure that member companies get maintenance and updates, and we have confidence that those contracts will continue." Hunter would not comment on future implications. "It is still too soon to know for sure what will happen long-term."

And despite machinations among its founding companies—including major strategy shifts of TurboLinux and its ultimate sale to a Japanese firm, and the high-profile lawsuit and decision to drop its own Linux distribution by The SCO Group, formerly Caldera International Inc.—UnitedLinuxLLC still chugs along.

Although part of its mission was to attract more Linux developers to join, UnitedLinux still is limited to its founding four, which Hunter attributed purely to economics. "It isn't free to join. Some of the [Linux developers] that were potential targets simply could not afford to make the same level of investment that the [UnitedLinux] member companies are making. [and] we wanted the investment to be fair," she said, adding that the organization is not currently seeking new members. ■



Hunter is confident that Novell will fulfill SUSE contracts.

establish itself with developers to become successful. "They have good assets and good opportunities, but, boy, is there a lot of work to do," he said. "You have to have products and developer programs. You need more than they've got at the moment."

Rymer recalled that in the early 1990s, Novell had a formal program to develop APIs and build a developer community around NetWare "back when it was important...and it failed miserably."

Nugent said Novell will be working with the Open Source Development Labs to create a common set of APIs for open-source developers to write to that spans the desktop to the server, as well as creating its own common APIs so developers can address the Novell stack either through a Web services framework or via the functional APIs. As for tools, Nugent said, "They will migrate to the Linux client environment as desktops become more attrac-

NOVELL SUSE

◀ continued from page 1

struggling with what the right GUI is now," Nugent acknowledged. Similarly, users of Microsoft development tools can create .NET Web services for Linux.

"If you don't have a package that's popular with developers, you'll be relegated to the back room," Nugent said. "This is not something Novell had done in the past. We didn't have a deep enough understanding of what developers were looking for to pull it off." Novell, which has a loyal customer base of NetWare network directory users, was having a hard time selling to corporate CTOs who are increasingly seeking more-complete platforms from fewer vendors, Nugent said. "Now we're strategic and relevant again," he said. "This positions us in a whole new light."

Forrester Research Inc. vice president John Rymer said Novell must

Industry Delights in Novell SUSE Linux

Acquisition enthusiasm causes spikes in stock price, downloads

BY EDWARD J. CORREIA

When one company acquires another, often the buyer's stock price initially declines. One exception was Novell Inc.'s announcement of a planned acquisition of SUSE Linux AG in November; shares spiked at US\$8.75 from around \$6 pre-acquisition, finally settling at around \$7.50—still enough to increase Novell's market cap to more than cover the cost of purchasing the European Linux developer.

Tim Witham, lab director at Open Source Development Labs (OSDL), a Linux development and testing facility funded by such companies as Hewlett-Packard, IBM and Intel, said the swing in Novell's stock price demonstrates that the market liked what Novell did. "This could be really good for Linux, because it gives you two really strong competitors, and that's

always better. If a company doesn't have good competition, people don't push themselves, and you don't get to what the consumer wants."

The other competitor, of course, is Red Hat Inc., which also reacted to the news with enthusiasm. John Young, the company's vice president of marketing, said Red Hat is looking forward to the increased competition. "When you build a great market, you expect that other players will want a piece of it. We are developing not only a Linux operating system but [other] pure open-source components and a platform for business applications. That will continue to distinguish us."

Red Hat plans to join Novell in the battle over enterprise Linux distribution; CEO Matthew Szulik said that Red Hat would stop selling its base-

line desktop distribution by April 2004.

Red Hat's recent moves, including the release in October of its more scalable Enterprise Linux 3, make it clear the company is focusing entirely on the enterprise, where Young is confident the company has an edge. "Novell's experience is in selling proprietary software. I'm not sure anyone has succeeded in having a mixed model of proprietary and open-source. It will be interesting to see how they balance the line between open-source and proprietary and how the open-source community responds. We expect to have a lot of competitors over time, and we welcome that."

"Somebody can have propri-

etary and open-source products; I don't think that's an issue," countered Witham. "I've talked

with people at Novell, and they really understand how Linux is developed and how the open community works and where to draw the line for their business. Novell's been around for a long time, and enterprise developers are used to dealing with them."

The announcement of the SUSE acquisition made for a major traffic surge at one Linux download site. "We've had the SUSE traffic triple since before the announcement," said Scott Kveton, a network engineer at Oregon State University, which hosts a mirror site for SUSE and other Linux distributions. Kveton said the daily average for



Having two strong competitors will be good for Linux, says OSDL's Witham.

SUSE file downloads in October was roughly 68GB, while in the first few days after Novell's news, it peaked at 232GB.

Kveton said he believes that most of the SUSE traffic represents people getting it for the first time rather than current SUSE users downloading their last pre-Novell version. "Open-source users know they can always get old versions." Kveton said he has seen spikes in downloads of other Linux offerings since Red Hat's announcement that it would stop selling its basic distribution, and has been hearing lots of talk recently at Linux user group meetings about migrating from Red Hat. "The main topic was 'where are people going, what are they switching to?' because home users for sure aren't going to use Red Hat Advanced Server." ■

SUSE ACQUISITION COULD BE FACTOR IN SCO SUIT

BY YVONNE L. LEE

Novell Inc.'s acquisition of SUSE Linux AG and IBM Corp.'s concurrent US\$50 million investment in Novell could have bearing on The SCO Group's lawsuit against IBM.

Not only did IBM place the investment in Novell, which previously owned all rights to Unix and retains some claims to the operating system, but Novell

president Jack Messman publicly challenged SCO's case at the SUSE acquisition announcement and following Red Hat's filing an unfair competition suit against SCO.

"I think there's a lot of litigation around SCO," said Messman. "Novell continues to call on SCO to make public their claims, which remain unsubstantiated. We're not holding

back because of SCO's unsubstantiated claim."

On the other side of the lawsuit is SCO, which characterized Novell's moves as "risky." "Novell's acquisition raised a lot of questions and suggests that they're willing to take on some level of risk," said SCO spokesman Blake Stowell.

IBM has submitted letters and legal agreements from

Novell, which purchased Unix from AT&T's Unix Systems Labs, to the U.S. District Court as part of its counterclaim against SCO's lawsuit. IBM and Novell have said that SCO has not shown how and where Linux infringes on SCO's intellectual property.

SCO counters that it has already named what is infringing in Linux. "IBM has put the journal file system from AIX into Linux," said Stowell.

"They've put various programs from their Dynix operating system, which they got when they acquired Sequent," he said, citing specific features such as non-uniform memory access (NUMA), Remote Copy Update (RCU) and "various schedulers and high-end symmetric multiprocessing technology [into Linux]."

Stowell added, "These are derivative works that they are contractually not able to contribute to Linux. I'm not sure we can be more specific than that. That's pretty specific. We've also publicly said that all those programs make up over a million lines of code."

Novell and SCO disagree over what rights to Unix Novell still owns. Novell claims that it

tive to enterprise customers." Real Linux desktop IDEs, he suggested, are still about a year and a half away.

The acquisition, according to Novell CEO Jack Messman, gives Novell the chance to pass Red Hat as the leading distributor of Linux in the enterprise. "We believe [our direct sales force] will take SUSE Linux to the enterprise level. We believe the Novell channel will be a significant advantage to us, and we'll quickly ramp up."

"No one has what we have in this space. We've got all the bases covered," said Chris Stone, Novell's vice chairman. "With SUSE as our operating system and our network, directory and services offerings, we expect to take advantage of that fast. It's a big differentiator."

Does the acquisition again make Novell a competitor with Microsoft? "We didn't do this to compete with Microsoft," Stone said. "The object is to reduce impediments to Linux in the enterprise." He did acknowledge that Novell has some opportunities to get Microsoft Exchange customers and Red Hat end-of-life program customers to switch to the Novell platform.

"In essence, everything every company does in the software business competes with or complements Microsoft," Nugent said. "It's not about Microsoft, though. It's about what we need to do to make ourselves relevant."

The company's NetWare 7 operating system will run both on NetWare and Linux kernels, Messman said. "We are not

dropping NetWare," he emphasized. "We're adding Linux."

Novell intends to keep the SUSE brand going, along with the 399 SUSE employees it inherits. Messman said the purchase will be neutral to Novell's fiscal 2004 earnings per share, but he anticipates a positive effect on earnings after that.

"If we don't succeed, woe is us," Nugent said. "We really are in control now. We're here to stay. Sometimes a bold step is what you need to get yourselves back on track."

Forrester's Rymer said, "For them to be an enterprise-scale Linux provider, they've got a long way to go. It would be a mistake to overestimate where they're at now. But for the first time in 10 years, they actually have a future." ■

owns some Unix patents and continues to own rights concerning enforcing licenses.

SCO disagrees. "The only thing Novell continues to receive, to my knowledge, are some royalties from Unix customers that they had at the time they sold the Unix operating system," said Stowell, adding that it would have been "stupid" for his company to have bought rights to Unix without also buying enforcement rights to its licenses.

Some observers believe that IBM's investment was made to ensure it would continue to have access to Linux.

"I don't usually believe in these behind-the-scenes things," said Bill Claybrook, research director at Aberdeen Group. "My feeling is, one of the reasons IBM is investing this \$50 million in Novell is they want to make sure they keep Linux. SUSE is the primary operating system for IBM across all their platforms."

Most recently, the Open Source Development Labs, a consortium of Linux vendors, announced that OSDL and Linux creator Linus Torvalds (an employee of Transmeta Corp. who currently works at the OSDL) had been subpoenaed by SCO. OSDL claims that it will fund the legal representation for Torvalds. ■

Salmon's SOFIA 2.1 Has Form Validator

BY YVONNE L. LEE

Salmon LLC, the consulting firm that makes and distributes the SOFIA Java open-source tool set for building database-driven, J2EE-based Web applications, has released an interim

version with more than 12 new features.

"If you want to keep open-source folks happy, you've got to issue new releases often," said president Dan Dubinsky. "We're trying to do a new

release every three months. Sometimes, it slips and it goes to six. Every three months seems to keep everyone happy."

Dubinsky said SOFIA 2.1 was more of a maintenance release, and that the February

2004 release will be a more formal upgrade.

New features include a form validator that can validate from the client side as well as from the server, expanded tree structures that add tables to a collapsible

tree, and integration with JasperReports. The new tools make it possible to add in the ability to create JasperReports from the IReport tool and to read in reports, which can be converted to PDF or text file formats.

A site map feature makes it easier to revise files throughout a site by using placeholder names. A name change in one place changes the entire site, Dubinsky said. Another feature addition is the ability to use Oracle synonyms, so database tables can have more than one name.

SOFIA 2.1 is available for free from www.salmonllc.com/website/Jsp/vanity/SofiaDownload.jsp. ■

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tree, and integration with JasperReports. The new tools make it possible to add in the ability to create JasperReports from the IReport tool and to read in reports, which can be converted to PDF or text file formats.

A site map feature makes it easier to revise files throughout a site by using placeholder names. A name change in one place changes the entire site, Dubinsky said. Another feature addition is the ability to use Oracle synonyms, so database tables can have more than one name.

SOFIA 2.1 is available for free from www.salmonllc.com/website/Jsp/vanity/SofiaDownload.jsp. ■

Ixiisoft's TextML Adds Replication

BY YVONNE L. LEE

Ixiisoft Inc., maker of the TextML XML-based database server, announced new versions of the product claimed to be designed for larger projects.

"We deal with content that does not map neatly to rows and tables, or where the XML structure might have a very nested structure in some instances and not in others," said CEO Philippe Gelinis.

Major new features of TextML Server 3.0 include the ability to replicate data on multiple servers, version control and more granular security.

The search load can now be distributed between multiple servers where a master server acts as a publisher of content to one or many subscribers. In addition, the new version supports Windows clustering, so the system can be used as a giant distributed repository.

The new version-control features are particularly useful in publishing, said Gelinis. Previously, the software automatically overwrote earlier versions of a file when it was updated unless users specifically saved a new version. Now, the default is set to create a new version, which creates an audit trail of changes to the documents.

Montreal-based Ixiisoft has refined the security settings so that access can be assigned to documents, collections of documents and whole document databases.

TextML Server 3.0 is scheduled to be available later this month with a price of US\$25,000 per server. ■

ECLIPSE

continued from page 1

and a Board of Stewards, which acts as a steering committee, determining which features and source code will go into Eclipse. Being on the Board of Stewards gives a company the right to base commercial software on the Eclipse foundation.

Borland Software Corp., IBM, Merant Inc., QNX Software Systems Ltd., Rational Software Corp., Red Hat Inc., SUSE Linux AG, TogetherSoft Corp. and WebGain Inc. formed the initial eclipse.org Board of Stewards in November 2001. IBM selected that board to include traditional information technology developers, Linux companies and embedded developers. Subsequent boards have grown by a two-thirds vote of existing Board of Stewards members. Today, McGaughey said, the Eclipse organization has 47 companies on its board.

Not only the chairperson, but six other nonvoting stewards are on assignment from IBM or member companies.

The new organization will continue to work with open-source committers and to serve existing Board of Stewards members, McGaughey claimed. However, the new organization will have three overseeing councils to carry out these tasks. The architecture council will work on application programming interfaces to the IDE. The planning board will work with the open-source community and build a road map for technology going forward. The requirements council "is going to be working with all the member companies and open-source people to make sure everything is done in an open way," said McGaughey.

BY ANY OTHER NAME...

After restructuring itself, the open-source group may adopt a new name, but that all depends on whether it can successfully woo Sun Microsystems Inc. to join the effort.

"A name that's a direct attack on us is probably not a good thing," said Joe Keller, Sun's vice president for Java Web services and tools marketing, referring to the term "Eclipse," and alluding to the common notion that the project's name was meant to imply that it would overshadow Sun's own open-source IDE project, NetBeans.

"If the name is a problem, we'll change the name," Mc-

Gaughey said. "Sun represents a major, major leadership role in the Java world. It would be in the industry's best interest as defined by the board to have Sun participate."

Sun is mulling over the offer and waiting for the coming articles of incorporation, said Keller. "When they get to incorporation

and have announced that, that's something we'll look into," he said. "For us to join, we sort of need to know what that organization is and what it stands for."

If Sun joined Eclipse, one of its motivations would be to create a common way for plugging tools into IDEs, Keller said. "The people who build those test

tools have to do it three times because there are three different ways of doing things," he said. "That would be part of our agenda for joining Eclipse, to build that kind of interoperability. [We would] be part of that community, make sure they pursue Java standards in the right way."

However, Eclipse member

Oracle Corp. is already leading an effort, JSR-198, for common plug-ins among Java IDEs.

If Sun did join, it would not abandon its NetBeans initiative, Keller said, claiming that 600,000 copies of the latest version have been downloaded since it was announced at Sun's JavaOne conference in June. ■

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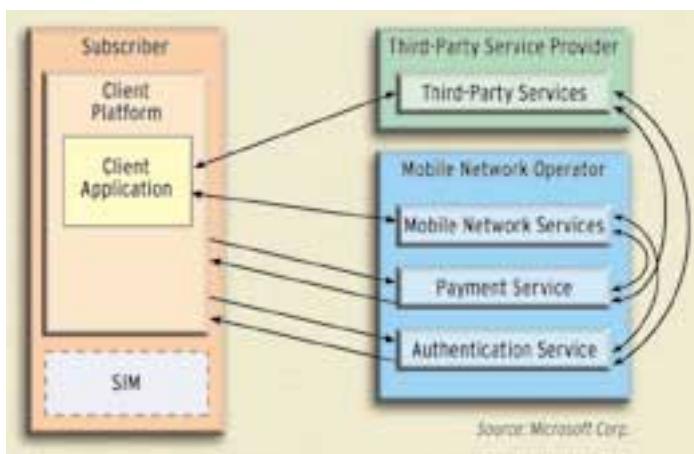
Microsoft, Vodafone Get More Specific on Mobile-to-Desktop

Technical details of alliance reveal more than meets the eye

BY EDWARD J. CORREIA

Microsoft Corp. and Vodafone Group Services Ltd. in late October published a technical road map detailing their plans to expose mobile services to desktop applications. The outline, which according to Microsoft has generated interest from an unspecified list of major industry players, also is being viewed by one analyst as a potential cash cow for what already is one of the world's richest companies.

Nick Jones, a vice president in Gartner Inc.'s research group, believes that on its face, there's value in such a proposal. "People are trying to push mobile phones into being more of a general business accessory. That means that the mobile network is already charging people for things other than phone calls. So if we have a secure connection between a PC and mobile network, then suddenly the PC can make charges to somebody's mobile phone bill. So it would be useful for Windows PCs to access network services and create apps that deal with mobile devices more easily."



The specs could lead to charges through mobile networks for desktop apps that have little to do with mobile, according to one analyst.

But Jones said the news was fascinating more for what the companies were not saying. "There's something much more interesting happening as you run it into the future." Jones described a Vodafone demonstration in Geneva in early October during which a USB dongle containing a SIM card was connected to a personal computer. "That opens up the opportunity for Microsoft and others not only to develop more interesting applications that link PCs with the mobile phone, but also allows you to

start charging people with PCs in new ways that might not have anything to do with mobile. There's a future where Vodafone could be taking the charge for the rental of Microsoft Office running on my PC."

John Maffei, a Microsoft group product manager, acknowledged the potential, but described in more general terms how the technology might be applied. "Vodafone would love the concept that application developers could leverage their billing engine and use a PC application to send mes-

sages to a sales force in the field," he said, or for authentication or location-based transactions too small to be performed using credit-card methods.

Regardless of the specific applications that might emerge, Maffei said the idea is to garner cooperation among mobile network operators, handset vendors, integrators, network equipment providers and others to create a consistent way to expose and call mobile services.

"If I'm a PC developer and want to add SMS capabilities to my products, it's different to do it on Vodafone, Orange and T-Mobile networks. It's an untenable proposition [for developers] to have technically proprietary relationships with multiple mobile network operators. So we want to make it easy and understandable for developers to consume these services. But we need to make sure it's done in a common way so PC developers can understand what they're adding or being asked to consume."

NOTHING NEW HERE

The efforts, Maffei continued, would be aimed not at creating

new intellectual property, but at defining how existing technologies can work together. "Over the last two years, we've done a tremendous amount of development in [Web services] specifications. And many operators use GSM authentication. How do we take GSM authentication and get it to work with WS-Security? These are the things we are trying to work on."

To skeptics suspicious that Microsoft's motives are to create proprietary technologies and monopolize yet another market, Maffei said: "The idea is to collaborate. If it's just a Microsoft and Vodafone proprietary relationship, then we've really failed, because we want to offer numerous services from numerous operators and Vodafone wants to make sure they touch as many endpoints as possible, not just Windows endpoints."

Microsoft's expertise is in areas other than telecommunications, Maffei continued, and it needs cooperation from carriers and related companies to get these services off the ground. "Vodafone knows significantly more about running mobile billing, location and SMS engines. That's their business. What we understand is that there are ways for developers to leverage services in common ways that make it easy. We want to figure out the best way to commonly expose these services." ■

Trolltech Puts Smartphones on Road to Qtopia

Company to release cross-platform framework for cell phones

BY EDWARD J. CORREIA

Trolltech AS, developer of the Qt and Qtopia cross-platform application windowing framework and PIM suite for Mac OS, Linux and Windows, has set its sights on cell phones. The company in late October unveiled Qtopia Phone Edition, a Linux-based version of its application suite and development platform that it says will permit enterprise developers, cell phone makers and carriers to build customized applications for small devices that will also run on any of its supported platforms.

Like its sibling Qtopia PDA, Qtopia Phone will include PIM and e-mail applications that can be used as is or modified to suit

enterprise needs. According to David Kipping, director of business development, the phone edition will provide several preset screen resolutions and the ability to add customized ones, and will include slightly different UI components.

"We've refined the UI so it runs on even smaller screens [than those of PDAs]. Also, the navigation systems needed to be changed. The PDA version assumes there is some sort of pointing device or touch screen. A lot of phones don't have a touch screen, so we had to add softkeys, directional keys and keypad input." The new edition also will include a telephone dialer, messaging client and media player with MP3 and

MPEG capabilities.

Perhaps more significant is Qtopia's synchronization engine, which Kipping said can be used to keep field devices in lock step with enterprise back ends. "Enterprises can add their own apps to the environment or modify the existing apps for integration. With a CRM system [for example], a salesperson could always be in sync with current customers or make modifications to client records and send them up" to an enterprise server, he said, adding that a sync API will be provided. Qtopia Phone also will be able to



Think of it as Qtopia PDA for smaller screens, says Trolltech's Kipping.

sync with desktop versions of Qtopia PIM apps, as well as with files, and Microsoft's Outlook.

Linux-based cell phones are all but nonexistent in the U.S., but according to Kipping are in use in China and elsewhere in the Far East, where the advantages are being realized. "Class-

es running on servers or enterprise desktops can be moved over to a Qt-based handheld, and with very little development you get a subset of functionality running. Even though they are running different operating systems on

different processors, we have very good source compatibility between desktop and handheld," requiring just a recompile in some cases, he said. "You have to be careful with the UI, which sometimes has to be redesigned for a smaller screen."

Trolltech believes the potential market is too great to pass up. "We feel that Linux is an important trend and it's spreading around the globe. And there is a real need for a user interface for embedded Linux and we have the toolkit to do that. So the timing is good to create a usable platform."

Qtopia Phone Edition is scheduled for general availability in the first quarter of 2004. Exact pricing has not been determined, but Kipping said per-seat licensing costs and royalties will apply. As with other Trolltech software, developers may license under a GPL and forgo royalties. ■



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Java Versus .NET?

In enterprise shops, Java and .NET is more like it

BY JENNIFER DEJONG

If development technologies stood still—and stereotypes were always 100 percent true—when it comes to Java and .NET, you could simply draw the following four conclusions and skip the rest of this special report:

1. For smart clients, .NET rules.
2. Java is the way to go for large-scale, multiplatform integration at the back end.
3. In terms of development tools and ease of use, .NET is No.1.
4. As for security, Java running on Linux or Unix is a better bet than the .NET languages on Windows.

While there is an element of truth to each of these statements, as Java continues to mature and .NET makes serious inroads into development shops, the gap between Java and .NET from a capabilities standpoint is narrowing. Vendors behind the two development technologies continue to address the respective weaknesses of their products, and each is becoming more like the other.

"We all want to say, 'We have the one true path to your productivity,'" said Tony Goodhew, a product manager in the developer division of Microsoft Corp. "But if you want to build a Web site that sells books [for example], you can solve the problem with either [.NET or Java]," he admitted.

"At some point, we are going to reach some sort of balance between Java and .NET," added Bob Sutor, director of WebSphere Infrastructure Software at IBM Corp.

Neither IBM nor Microsoft is giving up the fight. Nor is either suggesting the other camp's solution is as capable as its own. They are simply acknowledging a new reality for enterprise developers. "It's no longer .NET versus Java. It's .NET and/or Java," said Goodhew, who has responsibility for Microsoft's Visual J# .NET product line.

"[Enterprise developers] don't care whether it's Java or .NET," said Rob McGovern, senior project manager at Infusion Development Corp., which provides developer training and consulting services in both Java and .NET. "They say, 'Make it work. Make it fit my time frame. Make it fit my budget,'" he said.

"From the customer standpoint you have to be practical," said Sutor. "It is



critically important to avoid the religious wars."

NOT ONE OR THE OTHER

Analysts agreed that Java and .NET, coexisting within the same enterprise, is indeed the new reality. "Going forward, a majority of organizations, especially larger ones, will have both," said Tom Murphy, a senior program director at research firm Meta Group Inc. Meta estimates that .NET penetration is currently at about 25 percent, while J2EE remains above 50 percent. "This is mostly a matter of time in the market," he said, adding that he expects .NET growth to accelerate rapidly.

"We are seeing an uneasy coexistence of the two, often in the same enterprise," said Dan Koloski, director of the Web application test group at Empirix Inc., which sells software and services to test both J2EE and .NET applications. As a vendor of testing products, Empirix tends to see applications on the early side of adoption, before they are actually deployed, said Koloski. "We've been seeing J2EE

for the last couple of years, but in the last six months, the number of .NET applications is on the increase."



The number of .NET applications has been on the rise, says Empirix's Koloski.

Development managers are making decisions on an application-by-application basis. "It's Java for some apps, .NET for others," said Murphy.

Sometimes that's a matter of playing to the perceived strengths of each. "In the traditional Unix camp, security was stronger, whereas Microsoft grew out of the desktop," said Eric Stahl, director of product marketing at BEA Systems Inc. He said .NET is the preferred platform for departmental systems, but Java is the choice for large-scale systems that integrate with back-end databases.

But many say that take on the world is changing. "The stereotype used to be .NET was not taken seriously on the enterprise end," said Koloski. But, today, from an enterprise application development standpoint, you need to consider both, he said.

The growing coexistence of .NET and Java reflects the reality that corporate computing environments have evolved over time and are heterogeneous as a result. "There are very few companies that don't have a mix of Unix and Windows systems," said Rikki Kirzner, research director for application development and deployment at research firm



We're entering a new era where the stack you choose won't matter as much, says BEA's Stahl.

IDC. "And they are not going to dump one platform for the other."

"Enterprises tend to grow organically. Technologies are adopted in pockets—sometimes for technical reasons, sometimes for political reasons," added IBM's Sutor.

And while the "write once, run anywhere" Java appeared to be the development technology of choice for highly heterogeneous computing environments, the advent of .NET has enabled many development managers to increase productivity without having to rely solely on highly paid Java programmers, said Meta's Murphy. "A lot of organizations believed that they would be 100% Pure Java. But most people realized that won't work. Not all of their developers have the skills needed to program in Java. Or perhaps [companies] need things well integrated with Microsoft Office. So they say, 'Maybe I'll use .NET too,'" he said.

Increasingly, it's that kind of practical consideration, not an allegiance to one camp or the other, that drives developer decisions. "Developers just want to go with what works," said IDC's Kirzner.

MAKING CHOICES

That was certainly the case for Matt Hird, vice president of technology at the online public records firm Superior Information Services LLC. "I don't care if it's J2EE or .NET," he said. "My driver is time-to-market, not standards."

Hird turned to BEA's WebLogic Portal to build a portal site that enables customers to access public legal records, such as bankruptcy filings. But when he needed to integrate the application with some of the firm's business-to-business customers, he went with .NET Web services, rather than BEA's implementation. The reason? Most of the customers were small ASP shops, which meant that, in this particular case, the .NET approach was the simpler, less time-consuming solution.

"[The customers' systems] make HTTP requests, and we give them default pages in ASP," said Hird. He put two junior members of his seven-person team on the Web services integration

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JAVA AND .NET

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project. "They learned .NET faster than they could learn J2EE," he said.

TWO DIFFERENT BEASTS

While J2EE and .NET provide increasingly similar capabilities, they remain fundamentally different. "It is not an apples-to-apples comparison," said BEA's Stahl. "Java is a programming language, based on a standard. By contrast, .NET is the entire stack, including other sets of products from Microsoft."

In the .NET model, Windows is the center of the universe, said Sutor. "Microsoft wants you to develop everything using the Windows programming model."

In general, BEA agrees with such assertions about Microsoft. But for the most part customers are allied around companies, not Java itself, said Mike Gilpin, vice president and research director at Forrester Research Inc. "In the Java camp, it's largely a competition among IBM, BEA and, to a degree, Oracle," he said.

BEA's claim is that other Java vendors—IBM, Oracle and Sun—each has an ax to grind about what deployment platform, what operating system, what database you use. "But as BEA, we don't care," said Stahl. "We can deploy WebLogic on Windows. You can use it with SQL Server. You can look up LDAP credentials in Active Directory."

IBM's approach is to focus on integration, which historically is a strong suit for the company, said Gilpin. "When we talk to customers—even those who are .NET-focused—we don't go in and try and rip out the platform. We ask, 'What do you need to connect with?'" He emphasized that Java gives you "an incredible choice on the platform, including the mainframe—as well as Windows."

MOVING TOWARD SOA

In the long run, what will really unite the J2EE and .NET camps is not their customers' commitment to both Java and .NET, but a shared commitment on the part of Microsoft, IBM and BEA, among others, to adopt standards for Web services.

"This is a new era we are entering here," said BEA's Stahl, referring to the Web Services Interoperability Organization (WS-I), a vendor-backed effort to promote interoperability across platforms, applications and programming languages. "It would be hard to find anyone who won't acknowledge that," he said.

What's remarkable is not so much that rival vendors are coming together. It's that the widespread adoption of Web services is a move toward a service-oriented architecture (SOA), where the stack you choose won't matter as much.

"When [applications are created] by stitching together multiple remote services, who knows where they are and

KEEPING UP WITH THE JONESES

Although some vendors maintain that what Microsoft does with .NET does not affect what BEA, IBM, Sun and others do with Java—and vice versa—there is evidence enough to contradict that. Despite the fact that Java has been around a good deal longer than .NET, examples abound of how each has influenced the other.

The Microsoft programming language C# is designed to appeal to Java programmers, offering them an easy entree into .NET. "It's a Java rip-off," said Eric Stahl, director of product marketing at BEA Systems Inc., who added that the concepts behind the J2EE model of building dynamic pages have been appearing in the .NET stack since its inception.

Java 2 Standard Edition (J2SE) 1.4 does a decent job of addressing Java's weakness on the client side. "It is so much better than J2SE 1.2, or even J2SE 1.3," said Mike Gilpin, vice president and research director at Forrester Research Inc. "But it may be too late. Enterprise developers are committed to Microsoft on the front end."

In general, competition from .NET is driving the Java camp to make its development tools more user-friendly. For example, BEA is betting that its visually oriented WebLogic WorkShop 8.1 will appeal to Visual Basic programmers who traditionally use Microsoft's Visual Studio .NET.

By the same token, Sun's Rave, a visually oriented development tool expected next year, is widely seen as a way to play catch-up with VS.NET.

Although Microsoft's C# is clearly a response to Java, that language is also influencing Java. "Some cool concepts from C#, such as a fast way of doing looping through a data collection, are making their way into the next version of Java," said Tim Kinslow, a practice manager at Trigent Software Inc., which provides development services in both Java and .NET.

-Jennifer deJong

what technology they are running on?" asked Stahl.

In this scenario, the work is actually distributed across the servers that the customer thinks make sense, said IBM's Sutor. "The integration work is occurring on my server. Now I will pass control to your server," he said.

With Web services, you are no longer forced into one camp or the other. "Finally there is a way to integrate [J2EE and .NET] that is not dependent on the vendors. This is huge," said Empirix's Koloski. ■

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EDITORIALS

Mergers and Portents

The pace of mergers and acquisitions, quiet during the beginning of 2003, has picked up in the fourth quarter. In this issue of SD Times, we're covering three such deals: Novell is buying SUSE, the No. 2 Linux distributor, for US\$210 million. Quovadx is buying Rogue Wave for \$71 million. And SafeNet is buying Rainbow for \$457 million. Meanwhile, Oracle continues to flirt with Peoplesoft in a deal that may not directly affect developers, but which could alter the landscape for packaged applications.

Does the end-of-year shopping spree imply a return to "business as usual," the end of the recession, the beginnings of another boom, increased spending in the technology market and the resurrection of the battered job market? Possibly.

While M&A activity is no guarantor of general market conditions, 2003 has been a year of economic growth—and the last quarter of 2002 saw a flurry of big-ticket acquisitions that dwarfs this year's escapades. That's when Borland began its \$185 million takeover of TogetherSoft and \$24 million deal for Starbase, Quest bought Sitraka for \$51 million, and IBM agreed to buy Rational for \$2.1 billion. And look how well 2003 did. With end-of-2003 M&A activity ramping up, we view that as a harbinger of growth for 2004.

Consumer spending is up. Business spending is up. The gross domestic product is up. Interest rates remain low, at least in the United States. While states and the federal government are struggling with poor revenues and huge deficits, key CEOs like Cisco's John Chambers are sounding increasingly optimistic. Yes, the "jobless" nature of the recovery is still a concern, and the international climate is grim, both in terms of the problems in Iraq and North Korea, and in the general slow pace of recovery outside of North America. But our reading of the tea leaves—and the latest M&A reports—may indeed portend better times ahead.

Novell Resurgent

Once upon a time, Novell was Important. A decade ago, NetWare was the top-shelf network operating system, and Windows was the new kid on the block. But Novell looked like a deer caught in the headlights of an oncoming car. While Microsoft focused all of its marketing and technology resources on taking over the server market, Novell made misstep after misstep. When Novell's then-chairman Ray Noorda began his futile assault on Microsoft's Office suite, it was "game over." The company barely survived Noorda's "challenge Microsoft everywhere no matter the cost" obsession, and took years to recover its market credibility.

But recover Novell has, although it took time for the pieces to come together. With its acquisition of SilverStream, Novell gained solid Java technology. With its acquisition of Ximian, it gained strong management tools that complement its application suite. With its pending purchase of SUSE, it's finally getting back into the operating system game. And most important, the company has matured and is more humble about its offering and its place in the market (having bequeathed its "challenge Microsoft everywhere" strategy to Sun's Scott McNealy).

With its solid technology portfolio and management team, we can finally say that Novell is back in the game. ■

LETTERS TO THE EDITOR

MISTAKEN COMPLEXITY

In his column [".NET Progress Worries Java," Nov. 1, page 35, or at www.sdtimes.com/cols/integrationwatch_089.htm], Mr. Binstock seems to mistake Java's flexibility for unnecessary complexity. Although Java's extension APIs and J2EE components are vast, they aren't mandatory. EJB, JSP, JNDI, JMS, JavaMail, JavaHelp and JINI, for example, are available à la carte. To say, on one hand, Java is too complex because of the APIs, and then to say they are irrelevant because .NET will have corresponding APIs in the future, makes no sense. To say JavaServer Faces adds to the complexity when it really simplifies development is just plain wrong.

Similarly, a diverse community is not always a sign of fragmentation. It isn't a bad thing that developers can choose between Struts or JSF or Tapestry or Velocity, or between Swing and SWT. It's not a bad thing that developers can mix and match stand-alone tools with pluggable IDEs on multiple platforms.

And it's not a bad thing that there are JEdit, Eclipse, Netbeans, IDEA, JBuilder and JDeveloper to choose from, and that you can probably run your favorite tools as a plug-in for any of them. There are Ant, Maven, JUnit, Jalopy, XDoclet, Middlegen, Hibernate...an almost limitless collection of tools that work well together, and help developers write better code faster without being tied to one IDE from one company.

There is a vast difference between cross-platform development, and having one platform with a few clones that are always one step behind. Whether .NET is inspiring fear in Java has yet to be seen. On the contrary, several U.S. states are investigating open-source alternatives, the Vietnamese government is considering mandating it, a consortium of Asian countries is planning an alternative to the dominant desktop platform, and the EU will probably look into something similar. While there is a large amount of OSS written in C, businesses and institutions deciding between .NET and Java on open-source platforms for applications will probably choose Java. It has a

longer history, more mind share and trust.

In regard to native code, Java has had compilers that can generate native code for quite some time.

One final thought: AspectJ isn't a last-ditch effort by IBM to breath life into Java; it's the first aspect-oriented language created several years ago by PARC, which happened to choose Java as its base language. It isn't fair to say that AspectJ will not impact the landscape. Nor is AspectJ the only AOP game in town. Other AOP frameworks include AspectWerkz and JBoss AOP.

I've left out the stories about reinstalling an OS because a service pack or patch for your favorite tool broke things. Haven't had that happen with Java yet.

Don Bleyl

This is the best article I read since I became a SD Times reader a year ago. Its cool-headed analysis distinguishes it from many other Java vs. .NET articles. We are a .NET shop

.NET A SERIOUS RIVAL

I have a few comments on some points in Andrew Binstock's column [".NET Progress Worries Java," Nov. 1, page 35, or at www.sdtimes.com/cols/integrationwatch_089.htm]:

Today, we see how the market, rather than the pundits, sees these issues. The lack of portability has become a non-starter as an issue. This is not because of the Linux port of .NET, called the Mono project. Rather, it's because Windows servers are cheap and universally available. If a hardware platform is inexpensive and ubiquitous, the problem of app portability loses a lot of its urgency, except for true zealots. Many sites are choosing .NET, and if they need a server to run it later, they'll pick one up cheaply. This statement totally overlooks that, in the current state, Windows is very insecure and unstable.

And a good Windows server can cost as much as a good Linux server (the hardware is the same), not counting the licensing issues.

However, in the midtier, ASP.NET was gaining because of the greater productivity it offered. .NET's better productivity is the result of two fac-

now but facing pressure from above to change to everything Java. I've forwarded this article to my boss for his reference. I'm sure he'll find some good information after reading it.

Jun Luo

If you take the time to learn to work with stuff like Xdoclet, Middlegen (Ant, of course) and you use JDO/Hibernate and the like, you will save a lot of time by generating instead of programming. The complexity can be automated away ever better. To learn this stuff takes some time, and it's usually not all too straightforward as something in a Microsoft toolbox would probably be. But are these tools available for Microsoft at all?

Consider a Hibernate, Struts Web application. You can generate your Hibernate descriptors using Xdoclet, generate your database scheme using Middlegen. Or alternatively, generate your JavaBeans from Hibernate descriptors or directly from the database scheme. You can also generate your basic Struts code through Middlegen. It takes a while to get it all

tors: the complexity of J2EE and the lack of Java development tools as good as Visual Studio .NET.

About complexity, the same was said about Java and C++. "Java will beat C++ because C++ is complex" or "VB will rule because it's easier to use," and several people got burned because what makes C++ complex is not only its sheer power and flexibility to do things, but that the set of skills to program in *any* OO language is not easy to acquire and master. You need not only a good understanding of the language, but also a good understanding of OO principles (which several people don't have) and software development principles. Without them, the end result will be such a mess that it will be impossible to maintain or difficult to use. That holds true for C# and .NET

Also, about the lack of Java development tools, I agree that JBuilder is not that good, but Eclipse has been evolving fast this last year. And, besides that, there is one IDE that shadows all the others: IntelliJ IDEA (www.intellij.com). It's easy to use, has powerful features and is very programmer-friendly. Comparing the cur-

to work, but when it does: Who's faster now?

Having said all that: If more time was devoted to documenting all these wonderful Java things in easy how-to's, a lot of the headache would go away and you wouldn't have to say, "If you get it to work, then..." but rather could say, "It is faster, period."

Having a tool like Eclipse has meant a lot in this area, because you don't stumble as much on the obvious problems (classpath issues and the like). Java is now more accessible to the average developer. And that's a spot that has always been occupied by Visual Studio.

I agree with some of your comments about the speed of JCP, but on the whole your article seems biased and a little uninformed.

I wonder why I'm not seeing more articles about the serious trouble Microsoft is in with available, valid open-source alternatives to their cash cows, such as:

- Office – OpenOffice
- Exchange – Open Groupware
- Content Management Server – several solutions
- Publisher – who cares?

rent state of Visual Studio .NET versus IntelliJ IDEA is like comparing a cold iron ring with a gold ring with a diamond. But, please, check it out and see for yourselves.

Meanwhile, Java has continued becoming more complex: JCA, Struts, Server Faces and so on—all good ideas but lacking overall coherence and integration.

By saying this, the author is overlooking the fact that .NET needs a lot of services (like the one provided by Windows Forms, mentioned in the article) that are the equivalent to JCA, Server Faces, EJB, Swing, etc. A good Windows (or .NET) developer must at least know the existence of these services, or will either reinvent the wheel or get stuck.

Also, Struts is not part of the Java API. It's an independent MVC framework built on top of servlets. There are at least three other frameworks like that: Spring, Maverick and Web-work. Thus, the only complexity they add is at the moment of choosing which one to use.

Overall, I think that .NET poses a serious rival to Java and J2EE, mostly because C# is a good language and tools are starting to appear to enhance

- Sourcesafe – cvs (and others)
- MSN Messenger – GAIM
- SQL Server – mySQL
- Windows Server – Linux, Apache, OpenLDAP, JSP
- Windows end user – KDE, GNOME (nowhere near completion), Mac (dark horse. What if they switch to Linux?)
- Visual Studio – Eclipse
- .NET – J2EE

You can hardly conclude otherwise that every profitable Microsoft product is under attack from an open-source/free alternative. Give it three to five years of development by the open-source community and how good do you think these products will be compared to Microsoft's? As good, almost as good or better? And they are free. What do you think people are going to choose? Microsoft is on the road to marginalization.

Marc Schipperheyen

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productivity. And if Java doesn't evolve, it will wither and die.

Rafael Alvarez

Andrew Binstock replies: Thanks for taking the time to respond with a thoughtful set of comments. I appreciate the effort you went to.

I agree with you that IntelliJ is probably the best IDE out there, especially for projects that require refactoring. I didn't mention it because I wanted to compare the most popular IDEs for Java versus those for .NET.

The various Java packages are not well integrated, which I think adds to their complexity. My view is that Microsoft seems to be keeping packages fairly well integrated, so that the increasing complexity of Java won't be repeated with .NET. Whether they can maintain this when they ascend to enterprise-capable applications is a whole other story. However, I sense that they learned a lot from the careless design of Win32.

Microsoft certainly could become mired easily.

Anyway, again thank you for your thoughts, and I hope we will have the opportunity to dialogue on these points as the markets in both languages evolve.

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GUEST VIEW THE STRANGE INCONSISTENCY OF DEVELOPERS

The software industry is inundated with books that help developers write better code.

Many of these books—for example, "Effective C++" and "More Effective C++" by Scott Meyers, "The Elements of Java Style" by Scott W. Ambler et al., and "Effective Java Programming Language Guide" by Joshua Bloch—provide invaluable insight into how to prevent many common and serious coding mistakes.

For example, publications by C++ experts like Meyers share tips for avoiding problems with issues such as memory management, shifting from C to C++, design and declaration, inheritance and object-oriented principles, operators, constructors and destructors; publications by Java experts share tips on creating and destroying objects, threads, exceptions, serialization and so on.

Most developers have read at least a few of the many available code improvement books, displayed these books prominently on their bookshelves, and felt that they were doing a good deed by recommending the books to other developers. When developers read the coding rules that these books suggest, they typically nod their heads like stoics and agree that the book's rules are wonderful.

After pumping their heads full of knowledge, they place these books on their shelves and have one of the following reactions:

- They think that their code already follows all these rules, and are happy to have found a book that confirms what good programmers they are.

- They think that it would be nice if their code followed the suggested rules, but they don't think there is any practical way to follow the rules in a realistic work environment.

Either way, developers continue to love their code improvement books, discuss the rules with other developers, and look for more and more code improvement books to read.

Developers also think that they already follow the rules or

that there's no way to check and follow the rules, so they don't see any real reason to worry about the rules when coding.

Sooner or later, most developers run across a static analysis tool that can read code and check whether it follows a set of coding rules.

Most developers are curious enough to give it a test run in hopes that it will confirm what great code they have and perhaps yield a few helpful hints. However, the results are usually far from pretty. In fact, the developer often learns that his code violates many of the coding rules the tool was designed to check.

Guess what the developer does next?

First, he says that his code cannot possibly be so bad, and starts examining a few reported violations in hopes that the hundreds of violation messages are all a mistake. After realizing that the code does in fact violate the rules, the developer then starts attacking the rules.

You would think that any developer with common sense would investigate the rules before attacking them.

You would also expect that if a developer learned that the rules the static analysis tool checked were based on the same rules promoted in his cherished code improvement books, he would be thrilled that he discovered an easy way to check whether his code followed the rules that he and his colleagues esteemed so highly.

Oddly enough, most developers do not think to investigate the rules. Instead, they attack the static analysis tools' rules at the same time that they collect and recommend code improvement books that promote the very same rules. I find this inconsistency as amusing as when a politician gets caught violating one of the same laws he helped to enact. ■

Adam Kolawa is chairman and CEO of test-tools maker Parasoft Corp.

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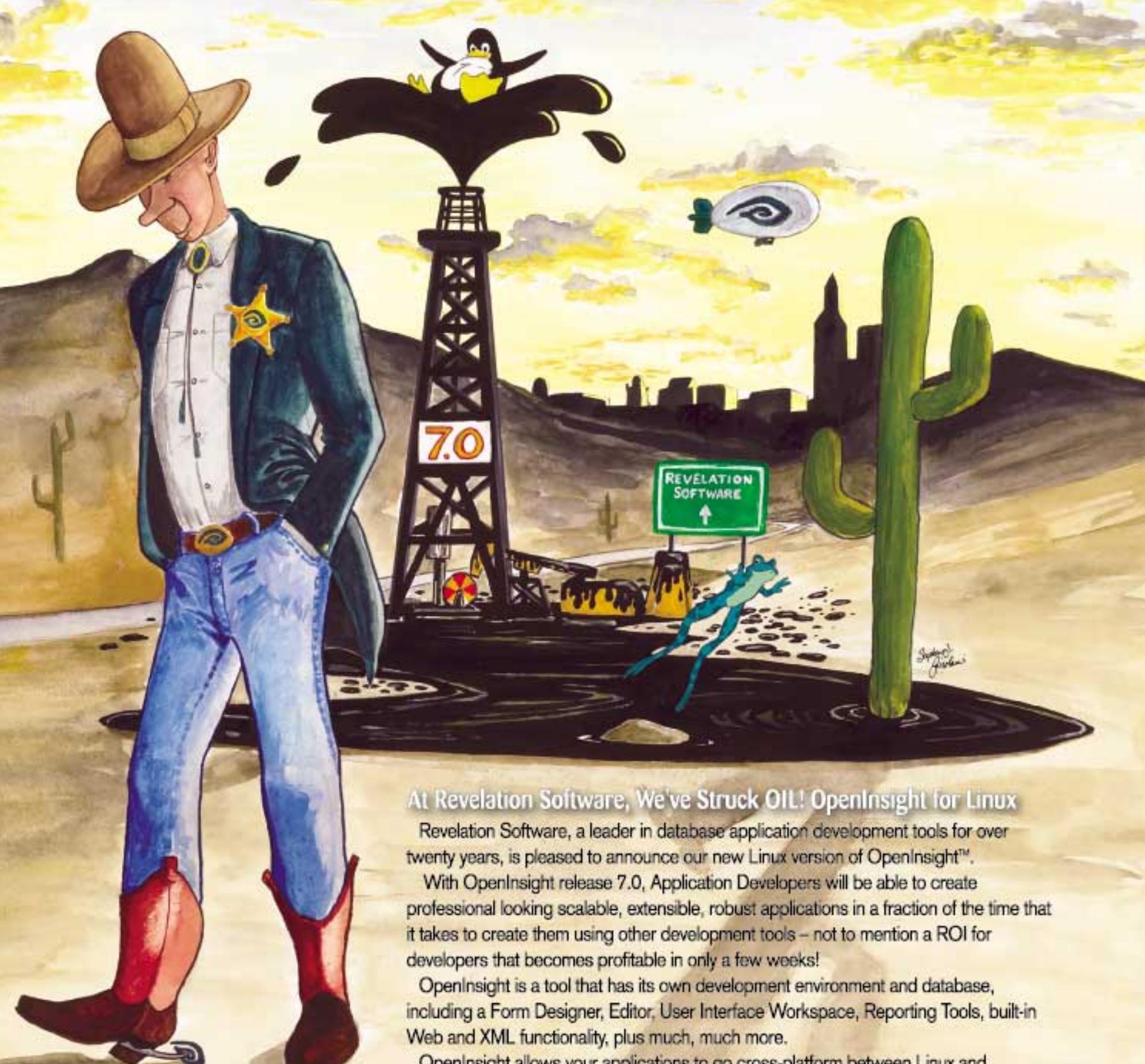
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S O F T W A R E

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A PERFECT DEMO

Thirty-five geeks quick-stepping through the normally interminable back-and-forth lanes of an amusement park, each one chugging an upended bottle in an attempt to maximize their beer buzz before embarking on a ride called "Back to the Future" that was, in fact, a motion simulator that didn't go anywhere. I'm not sure I can weave that into a seamless metaphor, but it's one of the memorable images that I carried away from Microsoft's late-October Professional Developers Conference, the annual gathering of the tribe.

Vendor conferences are always difficult to analyze because the zeitgeist is so driven by true believers, both internal to the company and external. And when it's Microsoft, the sheer psychic mass and extravagance of the presentation is so overwhelming that it's difficult not to be dazzled. As if renting out Universal Studios for an evening and the free Segway rides weren't disorienting enough, there was the spectacle of block-long banquet halls spilling endless supplies of free soda, chips and cookies in a kind of "Versailles meets 7-Eleven" aesthetic. But, really, the ultimate expression of Microsoftdom came in the form of demos.

Microsoft has perfected what might be called the demoslap. This is a swift-paced demo delivered with a perfectly calibrated mix of nonchalance for the task and enthusiasm for the end result that delivers the impression that programming has

been reduced to a somewhat persnickety typing exercise. There was a time when "fear, uncertainty and doubt" was a marketing tactic that relied on the existence of a specific Other. Microsoft has done away with that. Like the U.S. military, Microsoft doesn't have to enumerate who, exactly, will be crushed by a specific feature. That's an exercise for you in the audience to figure out. And, like the U.S. military, this dominance is not an illusion but the payoff of a long, determined investment.

Microsoft's demos are coming from a world that's essentially a complete business cycle ahead of everyone else. I don't mean the obvious fact that the demos are based on products that aren't yet shipping; what I mean is that while the rest of the industry has spent the past three years in a contraction from the dot-com days, Redmond has increased investment, cherry-picked star developers, and basically acted like the boom never ended.

The demos at PDC slap home the point that Microsoft does not see itself as being in the business of shipping patches for its existing software; it sees itself as being in the business of shipping brand-new capabilities.

While it's valid to say that Microsoft may continue to be playing catch-up in certain areas, such as security, the PDC started to reveal the structure of a uni-

fied strategy that leverages a lot of technologies that most people have viewed in a rather pragmatic, tactical light. Today, managed code is not just about virtualizing processors—it's about moving beyond "bits are bits." Similarly, XML is not just data representation—it becomes, in Microsoft's vision, a declarative glue moving among components, systems and networks.

It was impossible not to be cowed by the demos (one awestruck analyst shook his head in disbelief as he told me, "It looks like they could ship that next summer"), but several of the demonstrated technologies appear to require dangerous bets on disruptive technologies.

For instance, the dramatic search and organizational capabilities of WinFS—the new XML-based file system in "Longhorn," the next version of Windows—are based upon metadata. However, the metadata schema are not standards-based, and much more surprisingly, W3C XML Schema is *not* used as the schema language. I'm not ready to weigh in on that decision, but it's clearly controversial.

Similarly, I love the idea of producing vector-based user interfaces using a declarative markup language (XAML, pronounced "sammel"), but to rely on that to deliver user value appears to mean walking away from every pre-Longhorn device driver.

Microsoft deserves great credit for making so many Redmondians directly

available at PDC for questions. The amount of information you can glean from a presentation is minimal, but conferences often pay for themselves when you can go into depth on some thorny technical question. Microsoft bent over backward with its "Ask the Experts" sessions to make available literally hundreds of employees, sitting under nonintimidating, handwritten signs identifying their expertise. It was really, really great and exactly the sort of thing that a large conference should strive for.

My most memorable ride of PDC 2003 came on Bus No. 1, which looped from the Bonaventure Hotel to the conference, in which Microsoftian Steven Burns showed me "Monad," the new command-line shell for Longhorn.

Burns wasn't working from a script, and he wasn't in front of cameras. It was just a guy showing the work he was doing, which he hadn't been able to talk about until now, to a programming geek who happens to write a newspaper column. His enthusiasm was palpable, and even putting aside some aspects of the product, he did more to convince me of the reality of what he was showing than anyone on stage. More important, he was a testament to Microsoft's ability to hire and inspire talented developers, each working on some small part of a vast and ambitious project. ■

Larry O'Brien is an independent technology consultant and analyst, and the founding editor of Software Development Magazine.

MISSING THE ENTERPRISE SERVICE BUS

Middleware vendors are constantly trying to redefine the one thing they've been doing for years: providing a data pipe with connectors that transform the data for applications attached to the pipe. Latch onto that concept and you pretty much have understood the whole reality behind all forms of messaging middleware, particular Java Message Service (JMS), and the latest incarnation of this idea, the enterprise service bus (ESB).

ESB is a term invented by market analyst Gartner Group to refer to a pipe that was particularly well suited to handling Web services traffic. It's not clear this is a terribly helpful definition, because Web services are designed to run on just about any transport, whether HTTP or JMS or proprietary messaging paths such as those from IBM, Microsoft and TIBCO.

But ESBs are more than just plumbing on which XML payloads with SOAP wrappers can run. Analysts see the Web services transport as just one piece of the definition. The other is the overarching problem of integration. As it stands today, integration is still undertaken largely through expensive EAI servers that do their magical transformations on a dedicated system.

The enterprise service bus aims to

break this hub-and-spoke cycle, replacing it instead with a standards-based messaging bus—based on JMS—in conjunction with standards-based connectors—the J2EE Connector Architecture (frequently and incorrectly abbreviated to JCA).

The idea is that companies with new applications will start building on this bus design to communicate with other applications, either by using Web services or by coding directly to JMS and J2EE Connector Architecture APIs. Eventually, older applications will be retrofitted to the bus, and everything will be happily interconnected.

Am I the only one who thinks this emperor has no clothes? Not only can I see that the regent is stark naked, but he is thin, wan and familiar as well. The only thing this vision of the ESB offers that cannot be found in IBM's WebsphereMQ and in TIBCO's various products is that the latter are not inherently based on Java specifications.

Considering that by most analysts' projections, WebsphereMQ has more than two-thirds the market share, it runs on more platforms than Java, and it has more connectors than any other software platform, why not make it the standard

for ESBs? I am being facetious, but the point is serious: ESBs have no defining advantage over products such as WebsphereMQ, and they lack its credentials.

Don't get me wrong, JMS and the J2EE Connector Architecture are great. However, do they have the track record of WebsphereMQ in the enterprise? Emphatically not, especially not the J2EE Connector Architecture.

Further, is it reasonable to believe that a bus-oriented solution can actually replace EAI servers? Not clear. EAI servers do a lot more than just data transforms; they perform intelligent (and often complex) mapping of application fields, so that it's not only the data that's translated, but the context of the data as well. The principal way to approach this today is via Web services. This step forces a translation of the data to XML, which is expensive and not necessarily desirable because it distributes the necessary logical and data transforms to the endpoints.

For example, if the code for Urgent Purchase Order is an "XVP4" in bytes 20-23 of a CRM record, but "PO" in bytes 16-17 of an ERP record with a flag for urgent in a second record, and a single-field record with a P.O. number in it for an in-house application that then

retrieves the record and processes it ahead of the others—how will this one data qualifier be sent to the accounting software via a Web service? Will every sending side perform the necessary transform to some kind of universal format, or will the receiving end do this? And how about the reply?

In this not-too-hypothetical situation, my guess is that the logic will be distributed to both ends of the communication. This "solution" does away with the EAI problem by unsolving it and distributing it so that the solution is no longer centralized. Moreover, there is scant evidence that ESBs today can do this consistently under the volume loads needed by enterprises.

The principal companies pushing ESB are JMS vendors trying to break out of the commoditization of the JMS market. Companies with excellent solutions in enterprise infrastructure—IBM, TIBCO and the rest—are ignoring ESBs. In my opinion, you can too. If you think you need a Java-based ESB, buy established solutions from established middleware vendors and get their JMS wrappers. That way your code will be portable and you will have the assurance of true, tested enterprise buses. ■

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

WINDOWS & .NET WATCH



LARRY O'BRIEN

INTEGRATION WATCH



ANDREW BINSTOCK



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JAVA SECURITY

By my count, four major security patches arrived from Microsoft in October for the Windows operating systems, as well as two revisions of security patches. Producing clean software really needs to become job No. 1.

Java developers, at least, don't have to worry about Microsoft-sized security problems, right? Right? Maybe we do. A security tracking research group with the unlikely but perhaps appropriate name of The Last Stage of Delirium Research Group (LSDR) revealed on Bugtraq in late October that as of early June, it had found serious security vulnerability in Sun's current Java Virtual Machines.

You can read the full technical details at sites such as [insecure.org](http://insecure.org/lists/insecure.org/bugtraq/2003/Oct/027.html) (lists.insecure.org/lists/bugtraq/2003/Oct/027.html), but what it boils down to is that a malicious applet can load any class on a vulnerable system. Or, as LSDR put it, such applets "could *completely* bypass applet sandbox restrictions."

The vulnerable systems cited by LSDR are any that are running older Sun JVMs from Sun's Java Runtime Environment (JRE) or System Development Kit (SDK). In short, it's the JVM used with the Netscape, Opera and Mozilla browsers and, in any right thinking user's machine, Internet Explorer as well. This means that if your user visits a Web site

trapped with a malicious applet, your user can be absolutely screwed.

The fix, of course, is to get the newest JVM, or at least one that's been released since 1.4.1_03 from java.sun.com. However, consider that most users and way too many network administrators still don't load their Windows patches, even when their operating system tells them that they should. And consider that JVMs don't come with any "Windows Update"-style alert functionality. How many JVM users do you think are going to update their JVMs? Ten percent? Twenty percent? I doubt it will be that many.

That could be bad, bad news, because it means the Java world is one obnoxious hacker away from having a Slammer-sized problem. No matter how many millions Microsoft customers lose by using Windows, Microsoft customers keep coming back for more. I'm none too sure the same could be said for Java customers.

What we can do about it is make sure that when we send out applet packages, they go out with the latest JVM: Java Plug-in 1.4.2.01 as I write this. We should also update our own machines. I blush to say that although I've known about the security hole and the fix for

more than a week, I just updated my own machines as I wrote this.

You also can talk to the rest of the IT department, to spread the word to your help-desk and end-user support staff, and come up with the appropriate way to perform the update. In addition, you should consider notifying your customers about the JVM update.

Still, at its heart, this isn't a problem that we, as development managers, can do anything about. Sun makes the JVMs; we make programs that run on JVMs or one of the Java platforms.

What we can do, however, is ensure that our own applications follow some security basics. For example, while applets automatically run a security manager, no other Java programs do. It's not that big a deal to simply use the -Djava.security.manager flag when you start Java. Yes, there is a performance hit, but it's worth taking it; with today's hardware, it's much easier to get speed than it is to get security, so I vote for running all my programs with a security manager. Your coding may vary.

Of course, a lot of Java's security rests on the use of X.509 digital certificates, and obtaining and managing them can be a pain in the rump. Unfortunately, I think it's a necessary pain.

I wish I could say the same of the Java Cryptography Extensions (JCEs). I think

these can be useful, but they're difficult to work with, and unlike security managers, they can put a dent in performance even if you have high-powered chips under your server's hood. In the end, it comes down to your application's architecture. If your applications are going to spend a lot of their time trading data over potentially insecure network links, you'd better bite the bullet and use JCEs, otherwise skip them for now.

One thing that I do see skipped a lot more than it should be is the use of Java Authentication and Authorization Service (JAAS). With JAAS, you can set appropriate levels of user and group security in a manner that I find reminiscent of access control lists. OK, maybe it's not an ideal place to put security of this kind—I favor using directory services myself for user/group level security—but again, we're developers, not network administrators. If we can take even one step to making sure that a J2EE application can be run only by the users that should be running it, isn't that a good thing? Yes.

After all, given the track record lately of network administrators and users versus crackers, virus writers and script kiddies, anything anyone can do to improve security is a good idea. ■

JAVA WATCH



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Nearly every publicly traded company is buyable. No matter how well protected a company thinks it is against being taken over, unless the stock is closely held there's always someone larger out there needing to drive stockholder-mandated growth through acquisition.

Perhaps no segment is more susceptible to mergers and acquisitions than the software industry. A recent report by the consulting firm Bain & Company indicates that while approximately 70 percent of all software companies are not profitable, a great percentage of those that have sales of more than US\$1 billion are making money. It would appear that those unprofitable midrange and smaller tech companies have but three options—get swallowed up whole by a giant, form a merger with a comparably sized firm, or ultimately fail. For many, survival as they now exist does not seem feasible.

There are several factors at work that point to an increase in M&A activity, according to Bain vice president Charlie Kim, who co-authored the report. The first is that the U.S. economy is starting to gain some steam, which will lift the valuations of many of the companies that are looking to acquire smaller companies. This increase in valuation will give the midsized to large companies the freedom they need to go on a buying spree.

Another important factor, Kim said, is that software customers coming out of their own depressed economic times are less willing to add another vendor to the already long list of suppliers they have engaged to put their software and IT infrastructures in place. In fact, Kim explained, the move is in the other direction—away from “best-of-breed”

solutions and toward single-vendor purchases. This allows companies to simplify their service needs.

Finally, as large companies move away from point solutions toward larger platform buys, discrete software categories are disappearing—as exemplified by the Java application server market, which several years ago was a fairly large market opportunity for the different vendors vying for share. Now, because larger companies have begun to sell them more cheaply, or even given them away as part of a larger software stack, the number of companies still selling app servers as a stand-alone product has been greatly reduced. Bluestone? Swallowed up by HP, only to be sidelined. Allaire? Part of Macromedia. SilverStream? Now built into Novell's eXtend. GemStone? Owns the IP but doesn't even market it anymore.

Meanwhile, BEA and others have built large platforms around those monolithic application servers, and then created large developer communities around that, to ensure their viability for a longer period of time.

The relational database market already has undergone major consolidation, as the top four companies in that space account for 86 percent of the market, according to Bain. But in the middleware space, the top four vendors account for only 50 percent of the market—an area ripe for consolidation. This is because aside from stockholders clamoring for growth, large companies can gain an edge on their competitors by offering a richer product line that locks customers in to them even more closely.

One of the more interesting compa-

nies on Bain's radar is Sun. Its importance to the software industry is outsized relative to its current financials, making it potentially attractive to a very large company looking to acquire the Java trademark and control of the platform. However, working against that is the fact that Sun is both a hardware and software company, and the challenges of integration become immense.

Kim anticipates that the middleware/integration market and the business intelligence space are areas where M&A will pick up dramatically. After a peak of \$15.5 billion of merger activity in 2002, it had quieted down to \$6.4 billion in 2002, according to the report. In 2000, there were five deals worth more than \$1 billion; in 2002 there was one. Already this year, there have been three—with IBM's acquisition of Rational the largest at \$2.1 billion.

Companies that Bain said could become potential targets for acquisition, based solely on revenue numbers, market share and the value these product lines could add to large platform vendors, include TIBCO, Borland, WebMethods, Compuware and Mercury Interactive.

But is all this expected consolidation a good thing or a bad thing? Kim sees a parallel with the automotive industry, which in its infancy boasted numerous companies. Over time, that whittled down to the Big Three automakers—General Motors, Ford and Chrysler—before European and Asian companies came to challenge the U.S. market.

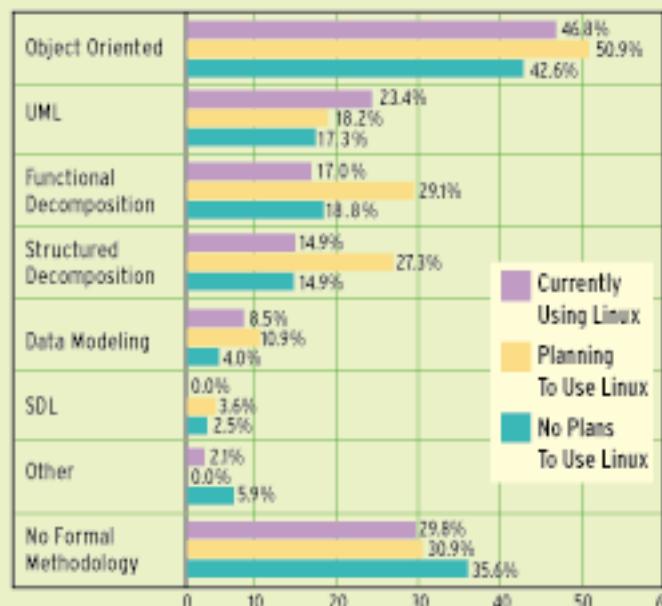
Software, of course, is different. It is a lot less expensive to open a software company than it is an auto plant. So, even after a period of consolidation, there will be even more small start-ups right behind, the folks with the new ideas that keep driving the industry and technology forward. And that's a very good thing. ■

David Rubinstein is editor of SD Times.

BUSINESS BRIEFS

Research firm IDC is predicting a return to growth for the IT and telecommunications industries. According to the latest version of IDC Black Book, worldwide IT spending should reach US\$916 billion next year, while telecom spending is expected to reach \$1 trillion. According to IDC, total spending in 2003 will grow in the United States and emerging markets, although Europe, Japan and Canada will continue to decline. “Since the end of major combat operations in Iraq, the U.S. economy and IT market have been poised for an upswing,” IDC economist Kevin White said in a statement. “There are signs that business investment is now rising.” . . . Mercury Interactive Corp. reported revenue of US\$126.1 million for its fiscal third quarter of 2003, which ended Sept. 30. That figure represents a 29 percent increase over the \$97.9 million in revenue posted for the same quarter in 2002. However, the company posted a GAAP-calculated net loss of \$6.7 million for the quarter, or 8 cents per share, compared with a profit of \$13.3 million, or 15 cents per share, last year. This year's third-quarter results reflect charges of \$12.7 million related to the acquisition of Kintana Inc. . . . Israel-based Magic Software Enterprises Ltd., seller of the iBOLT business integration suite and other development software, reported third-quarter earnings of US\$813,000, compared with a loss of \$2.16 million for the same quarter of 2002 ended Sept. 30. Total revenue for the quarter was \$15.6 million, an increase of 13 percent from last year, when revenue was \$13.8 million. . . . Integration software provider Composite Software Inc. has received an additional US\$12.1 million in venture funding, led by Lehman Brothers Venture Partners, to bring the total amount to \$17.35 million. Composite recently made available its Composite Information Server, which gives users in different departments or companies custom views of information drawn from disparate systems. . . . Rainbow Technologies Inc., which sells tools and devices to help developers embed anti-piracy and license-management features into applications, is being purchased by SafeNet Inc., which sells information security software. The value of the all-stock transaction is valued at US\$457 million; the deal is expected to close in the first quarter of 2004. ■

Software Design Methodology



DATA WATCH

A recent survey from research firm Venture Development Corp. asked embedded developers which software design methodology is in use for their current project.

However, VDC cross-tabulated the results against those who say they are currently using Linux, those who are considering using Linux, and those who have no plans to use that operating system. When you move below the object-oriented design methodology (which tabulated at 47 percent, 51 percent and 43 percent, respectively), results vary substantially.

For example, while 23 percent of those using Linux say that they use UML, only 18 percent of those considering Linux use UML. Seventeen percent of those who have no plans to use Linux report that they use UML.

It is interesting that while 29 percent of developers who are considering using Linux say that they use functional decomposition to design their software, only 17 percent of those who currently use Linux do functional decomposition, and only 19 percent who don't plan to adopt Linux use that technique.

Source: Venture Development Corp., October 2003. www.vdc-corp.com

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LinuxWorld Conference & Expo	Jan. 20-23
New York	
IDG WORLD EXPO	
www.linuxworldexpo.com	
Lotusphere 2004	Jan. 25-29
Orlando, Fla.	
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